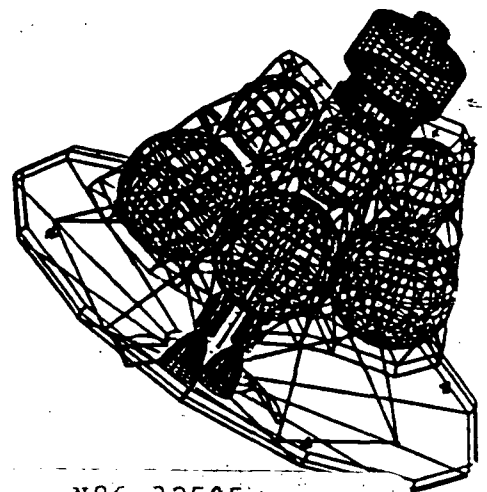
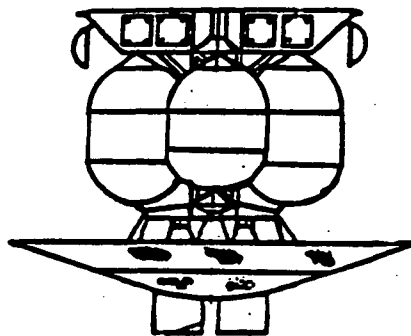
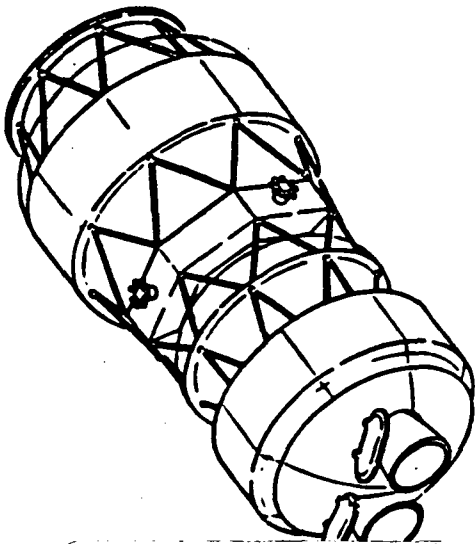


Boeing Aerospace Operations

ORBITAL TRANSFER VEHICLE Launch Operations Study



(NASA-CR-179766) ORBITAL TRANSFER VEHICLE
LAUNCH OPERATIONS STUDY. PROCESSING FLOWS.
VOLUME 3 Final Report (Boeing Aerospace
Co.) 230 p

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PROCESSING FLOWS VOLUME 3 OF 5

MARCH 7, 1986

FINAL REPORT

KENNEDY SPACE CENTER
NAS10-11165

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OTV PROCESSING FLOWS

and

REQUIREMENTS IDENTIFICATION SHEETS
(RIS's)

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The ground based flow was developed first because it could, initially, follow the lines of current processing practices at the KSC launch site. The space based flow was laid out in a similar fashion using the same primary task numbers to facilitate a direct correlation between space based and ground based activities. Several tasks are different, of course, either because of the zero "G" environment or because of the nature of the structure of the Space Station itself. Large cranes and tugs, for example, serve no purpose in space but an MRMS (Mobile Remote Manipulating System) will be used extensively during recovery, deployment, or moves at the Station itself. Another example of the cause for differences between ground and space based flows would be in the propellant tanking activity. The propellant storage area tanks are in the basic Station structure so the vehicle is loaded with cryos before it is moved to the launch site rather than after, as is the normal operation on the ground.

If a major task box is not used, that task box and number are just left out. If a new SBOTV task is added, it is associated with an existing major task box and identified as a new subtask by using a new decimal number within the block where it is added. As indicated above, the tasks may not run in the same sequence as for the GBOTV so the major task numbers for the SBOTV flow may not be sequential nor are all the GBOTV tasks used.

These facts alone lead to some elemental test optimization for the GBOTV. If the function is not used for the SBOTV then one must justify the addition of that item for the GBOTV or else delete it. In this fashion, the accomplishment of the necessities of Space processing can be first performed on the ground -- and be debugged in a more "test crew friendly" environment before being committed to space operations.

The flows were reviewed in detail and several potential candidates were identified in this manner for either deletion or else as items that could be deleted after first use where system integrity; eg, the cryo load test; and/or system compatibility; eg, the Cite test; had been satisfactorily performed and demonstrated. These items were identified as such on the flows in the Appendices. Additional savings may be available as a result of changes in test practices or as a result of the specific hardware in use at the time actual operations start. One should expect several iterations of these flows will be required before a final flow is evolved and approved. Whatever the flow configuration is, it must make: 1) a successful *Space Based Operation possible*, 2) provide for the transition of those needs to the *Ground Based Operation* as a set of basic requirements, and 3) provide for the orderly transition of those successfully demonstrated operations from *Ground Based* to *Space Based Operations*.

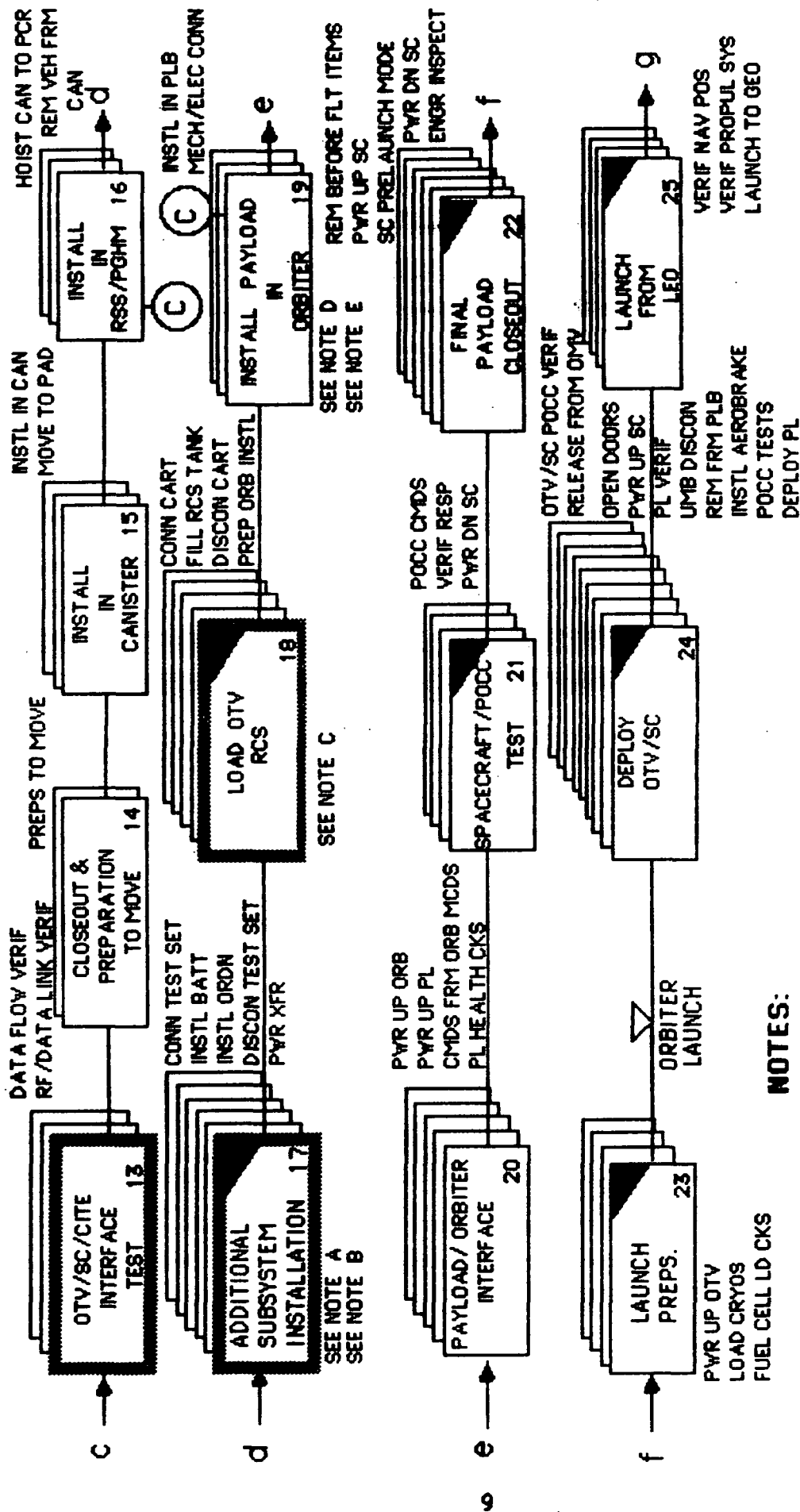
These two sets of analyses -- Flows and RIS's - for the GBOTV and for the SBOTV-- are the primary source of information for the rest of the KSC OTV Launch Operations Study. Work to identify KSC facility requirements for the OTV Program, simplify or automate either flow thru the application of automation technology, revise test practices and identify crew sizes or skills used these flows as the primary point of departure from current operations and practices. Analyses results were documented by revising the appropriate RIS page. The latest results of those analyses are the material included in the Appendices to this document.

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APPENDIX A

GROUND BASED
ORBITAL TRANSFER VEHICLE FLOW

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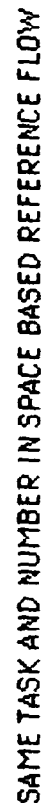


NOTES:

- A. BATTERY AND ORDNANCE -- REQUIREMENTS AND TYPE PRESENTLY UNDEFINED. INSTALLATION OF EITHER OR BOTH COULD OCCUR ELSEWHERE. DESIGN OBJECTIVE SHOULD BE -- IF THE FUNCTION IS REQUIRED, IT SHOULD BE ACCOMPLISHED OFFLINE.
- B. SC PROCESSING REQUIREMENTS IN PCR COULD INFLUENCE TOTAL FLOW TIME.
- C. RCS REQUIREMENTS ARE NOT FIRM. DESIGN OBJECTIVE SHOULD BE TO ACCOMPLISH OFFLINE.
- D. DESIGN OBJECTIVE SHOULD BE TO ELIMINATE ANY OTV ACCESS REQUIREMENTS IN PLB AFTER PLB INSERTION.
- E. OTV REENTRY BRAKING DEVICE PROCESSING -- TBD

SAME TASK AND NUMBER IN SPACE BASED REFERENCE FLOW

SUBJECT TO DELETION FOR OPERATIONAL EFFICIENCIES



APPENDIX B

GROUND BASED
RESOURCE IDENTIFICATION SHEETS

GROUND BASE DETAILED RESOURCE IDENTIFICATION SHEET DESCRIPTION

The following Ground Based Resource Identification Sheets (RIS's), have defined the OTV processing flow in 39 separate tasks. These tasks (1 thru 39) are detailed further to provide specific manpower and facility requirements by individual subtasks of the OTV processing flow.

The RIS for each subtask is divided into 3 sections; Personnel, Facilities, and Equipment Resource Requirements.

The Personnel section details manpower requirements at either the vehicle location or the control station. Along with the manning requirements is the serial time to complete the subtask and the computed total manhours. The Primary and Secondary keys associated with the Automation Technology Knowledge Base (ATKB), have not been keyed at this time.

The Detailed Facility Resources section indicates all the facility requirements for the specific subtask.

The Detailed Equipment Resources section indicates the additional special equipment required to perform a specific subtask.

A legend on the bottom of each sheet provides a description of the data as input to the analysis system. All the fields defined are self explanatory with the exception of those marked (*).

The Ground Based RIS's are presented in numerical order which coincides with the vehicle processing flow.

Detailed Resources Identification

Task No: 1 RECEIVING AND INSPECTION

Subtask No: < 1.0100> Description: <TRANSPORTATION LAND
Hazard Level(*): 1 None
Activity: TRANSPORT THE OTV TO KSC VIA LAND TRANSPORTATION

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(0)	(0)
Shop	(2)	(0)
Inspector	(1)	(0)
Other	(0)	
Sub Total	(3)	Total (3)

Serial Time To Complete: 5760 min

Total Manhours (288.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors:	0	0	0	W/H][ft]	
High Bay:	0	0	0	W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 0K	E.C.S: Humidity: 0 +/- 0 % Temperature: 0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: NA	Potable Water: NA Paging: NA
Commerical Telephone: NA	RF System(*): N OIS: NA
Personnel Airlock: NA	Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 1 RECEIVING AND INSPECTION

Subtask No: < 1.0200> Description: <TRANSPORTATION BARGE>
 Hazard Level(*): 1 None
 Activity: TRANSPORT THE OTV TO KSC VIA BARGE TRANSPORTATION

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 0 }
Shop	{ 2 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(3)	Total (3)

Serial Time To Complete: 5760 min Total Manhours (288.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: NA Instrumentation Power [Uninterrupted]: NA
 Cleanliness: OK E.C.S: Humidity: Temperature:
 0 +/- 0 % 0 +/- 0 F
 Closed Circuit Television: NA Power Cutoff: NA Facility GN2: NA
 Fuel/Oxidizer Disposal: N Helium Supply: NA Shop Air: NA
 Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA
 Lightning Protection: NA Potable Water: NA Paging: NA
 Commerical Telephone: NA RF System(*): N OIS: NA
 Personnel Airlock: NA Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 1 RECEIVING AND INSPECTION

Subtask No: < 1.0300> Description: <TRANSPORTATION AIR >

Hazard Level(*): 1 None

Activity: TRANSPORT THE OTV TO KSC VIA AIR TRANSPORTATION

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 0 }	{ 0 }
Shop { 1 }	{ 0 }
Inspector { 1 }	{ 0 }
Other { 0 }	
Sub Total (2)	Total { 2 }

Serial Time To Complete: 480 min

Total Manhours (16.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 0K	E.C.S: Humidity: 0 +/- 0 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: NA	Potable Water: NA
Commerical Telephone: NA	RF System(*): N
Personnel Airlock: NA	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 1 RECEIVING AND INSPECTION

Subtask No: < 1.0400> Description: <TRANSFER TO RECEIVING >
 Hazard Level(*): 1 None
 Activity: REMOVE OTV FROM TRANSPORTER AND PREPARE FOR TRANSPORT TO OTVPF

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 2 }	{ 0 }
Shop { 4 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (8)	Total (8)

Serial Time To Complete: 480 min Total Manhours (64.0)

Automation Need: (Primary Key)

Automation Secondary Key(s) : : :
 : : :

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: NA

Cleanliness: 100K E.C.S: Humidity: Temperature: 50 +/- 5 % 70 +/- 5 F

Closed Circuit Television: NA Power Cutoff: NA Facility GN2: NA

Fuel/Oxidizer Disposal: N Helium Supply: NA Shop Air: NA

Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA

Lightning Protection: Y Potable Water: NA Paging: Y

Commerical Telephone: Y RF System(*): N OIS: NA

Personnel Airlock: Y Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 1 RECEIVING AND INSPECTION

Subtask No: < 1.0500> Description: <RECEIVING
Hazard Level(*): 1 None
Activity: RECIEVE OTV/TRANSPORTER AND INSPECT

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 2 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(4)	Total (4)

Serial Time To Complete: 480 min Total Manhours (32.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: NA

Cleanliness: 100K E.C.S: Humidity: Temperature:
50 +/- 5 % 70 +/- 5 F

Closed Circuit Television: NA Power Cutoff: NA Facility GN2: NA

Fuel/Oxidizer Disposal: N Helium Supply: NA Shop Air: Y

Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA

Lightning Protection: Y Potable Water: NA Paging: Y

Commerical Telephone: Y RF System(*): N OIS: NA

Personnel Airlock: Y Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 1 RECEIVING AND INSPECTION

Subtask No: < 1.0600> Description: <XFER OTV TO OTVPF AIRLOCK >
Hazard Level(*): 1 None
Activity: CLEAN TRANSPORTER-REMOVE/UNPACK OTV IN OTVPF AIRLOCK

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (2)	(0)
Shop (5)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (8)	Total (8)

Serial Time To Complete: 240 min

Total Manhours (32.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 40 40 50 [W/D/H][ft]	10 Ton 45 Ft.Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 1 RECEIVING AND INSPECTION

Subtask No: < 1.0700> Description: <TRANSFER OTV TO CLEAN ROOM >
 Hazard Level(*): 1 None
 Activity: MOVE OTV INTO CLEAN ROOM HIGH BAY

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 5 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(8)	(0)
		Total (8)

Serial Time To Complete: 480 min

Total Manhours (64.0)

Automation Need: (Primary Key)

Automation Secondary Key(s) : : :
 : : :
 : : :

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	35	45	[W/H][ft]		
High Bay:	70	100	85 [W/D/H][ft]	20 Ton	70 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: Y	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 1 RECEIVING AND INSPECTION

Subtask No: < 1.0800> Description: <OTV INSPECTION>
 Hazard Level(*): 1 None
 Activity: INSPECT AND INVENTORY OTV HARDWARE

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (2)	(0)
Shop (3)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (6)	Total (6)

Serial Time To Complete: 480 min Total Manhours (48.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: NA
 Cleanliness: 100K E.C.S: Humidity: 50 +/- 5 % Temperature: 70 +/- 5 F
 Closed Circuit Television: NA Power Cutoff: NA Facility GN2: NA
 Fuel/Oxidizer Disposal: N Helium Supply: NA Shop Air: NA
 Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA
 Lightning Protection: Y Potable Water: NA Paging: Y
 Commerical Telephone: Y RF System(*): N OIS: NA
 Personnel Airlock: Y Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA Slings: NA OTV Adapter: NA
 Breakout Boxes: NA Adapter Cables: NA Ground Power Unit: NA
 Air Pallet: NA Work Stands: NA Special Hoisting Equip: NA
 NASA Canister: NA OTV Canister: NA

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 2 OTV MECHANICAL ASSEMBLY

Subtask No: < 2.0100> Description: <INSTALL ASSEMBLY STRUCTURE >
Hazard Level(*): 2 Local Clear
Activity: ATTACH SLING TO ASSEMBLY STRUCTURE-ATTACH SLING TO O/H CRANE-REMOVE
HOLDDOWN HARDWARE-REMOVE FROM PALLET INSPECT GUIDEPIPS AND ATTACH POINTS
Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 0 }
Shop	{ 5 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(9)	Total (9)

Serial Time To Complete: 960 min

Total Manhours (144.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	20 Ton	70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 2 MECHANICAL ASSEMBLY

Subtask No: < 2.0200> Description: <INSTALL CRYO TANK SET >
 Hazard Level(*): 2 Local Clear
 Activity: ATTACH SLING TO TANK SET LIFT POINTS-LIFT FROM PALLET-INSPECT
 DISCONNECT GUIDEPINS AND STRUCTURE ATTACH POINTS-LIFT INTO POSITION, SECURE, SAFE
 Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 2 }	{ 0 }
Shop { 5 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (9)	Total (9)

Serial Time To Complete: 720 min

Total Manhours (108.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	20 Ton 70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 2 MECHANICAL ASSEMBLY

Subtask No: < 2.0300> Description: <INSTALL RCS TANK SET >
Hazard Level(*): 2 Local Clear
Activity: IMPLEMENT SAFETY PROCEDURE-REMOVE TANK SET FROM SHIPPER-INSPECT-REMOVE
PROTECTIVE COVER/DEVICES-INSTALL IN OTV ASSEMBLY STRUCTURE, SECURE, SAFE
Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(2)	(0)
Shop	(5)	(0)
Inspector	(2)	(0)
Other	(0)	
Sub Total	(9)	Total (9)

Serial Time To Complete: 360 min Total Manhours (54.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	20 Ton	70 Ft. Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]:	NA	
Cleanliness:	100K	E.C.S: Humidity:	Temperature:	
		50 +/- 5 %	70 +/- 5 F	
Closed Circuit Television:	NA	Power Cutoff:	NA	
Fuel/Oxidizer Disposal:	N	Helium Supply:	NA	
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	NA	
Lightning Protection:	Y	Potable Water:	NA	
Commerical Telephone:	Y	RF System(*):	N	
Personnel Airlock:	Y	Grounding:	Y	
		Explosion Proof:	NA	

Detailed Equipment Resources

Special Tool Kit:	Y	Slings:	Y	OTV Adapter:	Y
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	Y
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 2 MECHANICAL ASSEMBLY

Subtask No: < 2.0400> Description: <INSTL PROPL SYS PLMB & CONTRLS>
 Hazard Level(*): 2 Local Clear
 Activity: ATTACH SLING TO LIFT POINTS, ATTACH TO O/H HARDWARE, SPECIAL W/S, INSP
 ECT GUIDEPINS AND ASSY STRUCT.-ATTACH POINTS. LIFT TO POSITION, ALIGN GUIDE PINS
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 0 }
Shop	{ 5 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(9)	Total (9)

Serial Time To Complete: 480 min

Total Manhours (72.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	70 100 80 [W/D/H][ft]	20 Ton	70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: Y
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 2 MECHANICAL ASSEMBLY

Subtask No: < 2.0500> Description: <INSTALL RCS/ENGINES >
 Hazard Level(*): 2 Local Clear
 Activity: INSTALL RCS NOZZLES AND ENGINES PER INSTALLATION PROCEDURES

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 0 }
Shop	{ 5 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(9)	(0)
		Total (9)

Serial Time To Complete: 480 min Total Manhours (72.0)

Automation Need: (Primary Key)

Automation Secondary Key(s) : : :
 : : :
 : : :

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	20 Ton	70 Ft.Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: NA
 Cleanliness: 100K E.C.S: Humidity: Temperature:
 50 +/- 5 % 70 +/- 5 F
 Closed Circuit Television: NA Power Cutoff: NA Facility GN2: NA
 Fuel/Oxidizer Disposal: N Helium Supply: NA Shop Air: Y
 Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA
 Lightning Protection: Y Potable Water: NA Paging: Y
 Commerical Telephone: Y RF System(*): N OIS: NA
 Personnel Airlock: Y Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 2 MECHANICAL ASSEMBLY

Subtask No: < 2.0600> Description: <INSTALL RCS NOZZLE COVERS >
 Hazard Level(*): 1 None
 Activity: INSTALL PROTECTIVE COVERS ON RCS NOZZLES

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (3)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (5)	Total (5)

Serial Time To Complete: 60 min

Total Manhours (5.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 2 MECHANICAL ASSEMBLY

Subtask No: < 2.0700> Description: <MATE MECHANICAL CONNECTIONS >
 Hazard Level(*): 1 None
 Activity: CONNECT CRYO PORTS AND ALL OTHER MECHANICAL CONNECTIONS INCLUDING
 RCS LOAD LINES.
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 3 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(5)	Total (5)

Serial Time To Complete: 300 min

Total Manhours (25.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 3 ELECTRICAL ASSEMBLY

Subtask No: < 3.0100> Description: <INSTALL CABLE HARNESS >
 Hazard Level(*): 1 None
 Activity: INSTALL/CONNECT CABLE HARNESS ASSEMBLY

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 3 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(5)	Total { 5 }

Serial Time To Complete: 360 min

Total Manhours (30.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	20 Ton	70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 3 ELECTRICAL ASSEMBLY

Subtask No: < 3.0200> Description: <INSTALL POWER SYSTEM >
 Hazard Level(*): 2 Local Clear
 Activity: ATTACH SLING TO LIFT POINTS AND O/H CRANE, INSPECT GUIDE PINS, ATTACH POINTS AND INTERFACES, LIFT TO POSITION, INSTALL, SECURE AND SAFE
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 3 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(5)	Total (5)

Serial Time To Complete: 480 min

Total Manhours (40.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0		[W/H][ft]	
High Bay:	70	100	85	[W/D/H][ft]	20 Ton 70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 3 ELECTRICAL ASSEMBLY

Subtask No: < 3.0300> Description: <INSTALL GN&C SYSTEM >
 Hazard Level(*): 2 Local Clear
 Activity: ATTACH SLING TO LIFT POINTS AND O/H CRANE, INSPECT GUIDE PINS,
 ATTACH POINTS AND INTERFACES, LIFT TO POSITION, INSTALL SECURE AND SAFE
 Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 3 }	{ 0 }
Inspector { 1 }	{ 0 }
Other { 0 }	
Sub Total _____ (5)	Total _____ (5)
Serial Time To Complete: 240 min	Total Manhours (20.0)

Automation Need: (Primary Key)

Automation Secondary Key(s) : : :
 : : :
 : : :

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	20 Ton	70 Ft. Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]:	NA	
Cleanliness:	100K	E.C.S: Humidity:	Temperature:	
		50 +/- 5 %	70 +/- 5 F	
Closed Circuit Television:	NA	Power Cutoff:	NA	
Fuel/Oxidizer Disposal:	N	Helium Supply:	NA	
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	NA	
Lightning Protection:	Y	Potable Water:	NA	
Commerical Telephone:	Y	RF System(*):	N	
Personnel Airlock:	Y	Grounding:	Y	
		Explosion Proof:	NA	

Detailed Equipment Resources

Special Tool Kit:	Y	Slings:	Y	OTV Adapter:	Y
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	Y
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 3 ELECTRICAL ASSEMBLY

Subtask No: < 3.0400> Description: <INSTALL AVIONICS SYSTEM >
 Hazard Level(*): 2 Local Clear
 Activity: ATTACH SLING TO LIFT POINTS AND O/H CRANE, INSPECT GUIDE PINS, ATTACH POINTS AND INTERFACES, LIFT TO POSITION, INSTALL, SECURE AND SAFE
 Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (3)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (5)	Total (5)

Serial Time To Complete: 240 min

Total Manhours (20.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	20 Ton	70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 3 ELECTRICAL ASSEMBLY

Subtask No: < 3.0500> Description: <MAKE ALL ELECTRICAL CONNECTORS>

Hazard Level(*): 2 Local Clear

Activity: CONNECT ALL ELECTRICAL CONNECTORS NECESSARY TO APPLY POWER AND PROVIDE COMMUNICATION FOR OTV CHECKOUT

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (3)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (5)	Total (5)
	Total Manhours (25.0)

Serial Time To Complete: 300 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 4 MECHANICAL SYSTEMS TEST

Subtask No: < 4.0100> Description: <LEAK AND PRESSURE CHECKS >
 Hazard Level(*): 2 Local Clear
 Activity: VERIFY PLUMBING CONNECTIONS,CONFIGURE N2 SYSTEM,PRESSURIZE TANK SET
 ANDPROPULSION SYSTEM PLUMBING
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 0 }
Shop	{ 2 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(6)	Total (6)

Serial Time To Complete: 1380 min

Total Manhours (138.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: Y
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 5 ELECTRICAL SYSTEMS TEST

Subtask No: < 5.0100> Description: <GROUND POWER APPLICATION >
 Hazard Level(*): 1 None
 Activity: APPLY POWER ON THE GROUND POWER UNIT . CONNECT LOAD BOXES TO ADAPTER CABLES AND ATTACH TO CPU OUTPUT-APPLY SIMULATED OTV LOAD
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 2 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(4)	Total (4)

Serial Time To Complete: 240 min

Total Manhours (16.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): A	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 5 ELECTRICAL SYSTEMS TEST

Subtask No: < 5.0200> Description: <SINGLE POINT GROUND CHECKS >
Hazard Level(*): 1 None
Activity: PERFORM SINGLE POINT GROUND CHECKS

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (2)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (4)	Total (4)

Serial Time To Complete: 180 min

Total Manhours (12.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): A
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 5 ELECTRICAL SYSTEMS TEST

Subtask No: < 5.0300> Description: <ACTIVATE POWER/ESSENTIAL BUS >

Hazard Level(*): 1 None

Activity: POWER ON THE POWER BUS AND VERIFY POWER PROFILE. POWER ON THE ESSENTIAL BUS AND VERIFY POWER PROFILE.

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(2)
Shop (2)	(2)
Inspector (1)	(2)
Other (0)	
Sub Total (4)	Total (6)
	Total Manhours (10.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): A
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 5 ELECTRICAL SYSTEMS TEST

Subtask No: < 5.0400> Description: <AVIONICS POWER ON CHECKS >
 Hazard Level(*): 1 None
 Activity: APPLY OTV AVIONICS BUS POWER FROM THE TEST SET OR THE OTVCS

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 2 }
Shop { 2 }	{ 2 }
Inspector { 1 }	{ 2 }
Other { 0 }	
Sub Total (4)	Total { 6 }
	Total Manhours (30.0)

Serial Time To Complete: 180 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors: 0 0 [W/H][ft]		
High Bay: 70 100 85 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): A	OIS: Y
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 5 ELECTRICAL SYSTEM TEST

Subtask No: < 5.0500 >

Description: <DPA SUBSYSTEM CHECKS >

Hazard Level(*): 1 None

Activity: VERIFY ALL AVIONICS ARE ON AND TELEMETRY MEASUREMENTS ARE PROPER.

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total	(4)	(6)
		Total (10)

Serial Time To Complete: 30 min

Total Manhours (5.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity:	Temperature:
	50 +/- 5 %	70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): A	OIS: Y
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 6 INTEGRATED SYSTEM TEST

Subtask No: < 6.0100> Description: <AEROBRAKE CONTROL CHECKS >
 Hazard Level(*): 1 None
 Activity: PERFORM AEROBRAKE CHECKS TO VERIFY PROPER OPERATION OF ALL COMPONENTS.
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 2 }
Shop	{ 6 }	{ 2 }
Inspector	{ 2 }	{ 2 }
Other	{ 0 }	
Sub Total	(10)	Total { 6 }
		Total Manhours (128.0)

Serial Time To Complete: 480 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: Y	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): A
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 6 INTEGRATED SYSTEM TEST

Subtask No: < 6.0200> Description: <EXTENDABLE EXIT CONE CHECKS >
 Hazard Level(*): 2 Local Clear
 Activity: EXTEND/RETRACT EEC-VERIFY ALL COMPONENTS ARE OPERATING PROPERLY.

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total	(5)	(6)
		Total (11)

Serial Time To Complete: 240 min Total Manhours (44.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: Y

Cleanliness: 100K E.C.S: Humidity: 50 +/- 5 % Temperature: 70 +/- 5 F

Closed Circuit Television: Y Power Cutoff: Y Facility GN2: NA

Fuel/Oxidizer Disposal: N Helium Supply: NA Shop Air: NA

Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA

Lightning Protection: Y Potable Water: NA Paging: Y

Commerical Telephone: Y RF System(*): C OIS: Y

Personnel Airlock: Y Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 6 INTEGRATED SYSTEM TEST

Subtask No: < 6.0300> Description: <ENGINE GIMBLE CHECKS >
 Hazard Level(*): 2 Local Clear
 Activity: CONFIGURE GPS/OTV GSE AND TRANSMISSION SYSTEM, TRANSMIT COMMAND
 (Ku-BAND CLR)
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total (5)		Total (6)
		Total Manhours (22.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	70	100	85 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power: Y			Instrumentation Power [Uninterrupted]: Y		
Cleanliness: 100K			E.C.S: Humidity:		Temperature:
			50 +/- 5 %		70 +/- 5 F
Closed Circuit Television: Y			Power Cutoff: Y		Facility GN2: NA
Fuel/Oxidizer Disposal: N			Helium Supply: NA		Shop Air: NA
Fire Protection/Deluge(*): A			Shower/Eye Wash: NA		Vacuum: NA
Lightning Protection: Y			Potable Water: NA		Paging: Y
Commerical Telephone: Y			RF System(*): C		OIS: Y
Personnel Airlock: Y			Grounding: Y		Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 6 INTEGRATED SYSTEM TEST

Subtask No: < 6.0400> Description: <INTEGRATED SYSTEMS CHECKS >
Hazard Level(*): 1 None
Activity: CONFIGURE GPS/OTV GSE AND TRANSMISSION SYSTEMS. TRANSMIT COMMAND (Ku-BAND CLR)
Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(2)	(2)
Shop	(2)	(2)
Inspector	(1)	(2)
Other	(0)	
Sub Total	(5)	(6)
		Total (11)

Serial Time To Complete: 1438 min

Total Manhours (263.6)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors:	0	0	0	W/H][ft]	
High Bay:	70	100	85	W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): C
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 6 INTEGRATED SYSTEM TEST

Subtask No: < 6.0500> Description: <GPS OPERATION CHECKS>
 Hazard Level(*): 1 None
 Activity: CONFIGURE GPS/OTV/GSE AND TRANSMISSION SYSTEM

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total (5)		Total (6)
		Total Manhours (11)

Serial Time To Complete: 720 min

Total Manhours (132.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	70	100	85 [W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): C	OIS: Y
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 7 OTV/CS-G TEST

Subtask No: < 7.0100>

Description: <OTVCS RF TEST

>

Hazard Level(*): 1 None

Activity: CONFIGURE OTV/GPS/GSE AND TRANSMISSION SYSTEM, TRANSMIT COMMANDS

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (2)	(2)
Shop (2)	(2)
Inspector (1)	(2)
Other (0)	
Sub Total (5)	Total (6)
	Total Manhours (11)

Serial Time To Complete: 960 min

Total Manhours (176.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

:
:
:

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commercial Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commercial Telephone: Y	RF System(*): C	OIS: Y
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 8 MOVE TO CRYO LOAD FACILITY

Subtask No: < 8.0100> Description: <PREP FOR TRANSPORT TO CRYO FAC>
 Hazard Level(*): 1 None
 Activity: BREAK TEST CONFIGURATION-INSTALL PROTECTIVE COVERS/DEVICES-INSTALL SLING FITTING FIXTURE-REMOVE HOLDDOWN HARDWARE
 Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 5 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (8)	Total (8)

Serial Time To Complete: 240 min

Total Manhours (32.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	20 Ton	70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 8 MOVE TO CRYO LOAD FACILITY

Subtask No: < 8.0200> Description: <REMOVE OTV FROM WORKSTAND >

Hazard Level(*): 1 None

Activity: MOVE TRANSPORTER INTO OTV HIGH BAY-REMOVE COVER-TRANSPORT OTV FROM WORKSTAND TO CANISTER-INSTALL/SECURE OTV IN CANISTER-INSTALL COVER

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(5)	(0)
Inspector	(2)	(0)
Other	(0)	
Sub Total	(8)	Total (8)

Serial Time To Complete: 540 min

Total Manhours (72.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	40 40 50	[W/D/H][ft]	10 Ton	45 Ft. Hook Height
Doors:	35 45	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	20 Ton	70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: Y	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 8 MOVE TO CRYO LOAD FACILITY

Subtask No: < 8.0300> Description: <MOVE OTV TO CRYO FACILITY >
 Hazard Level(*): 1 None
 Activity: MOVE OTV TRANSPORTER AND CANISTER TO CRYO FACILITY.

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 2 }	{ 0 }
Inspector { 1 }	{ 0 }
Other { 0 }	
Sub Total (4)	Total (0)
	Total Manhours (16.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: NA	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: Y	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 9 OTV CRYO LOAD AND DRAIN

Subtask No: < 9.0100> Description: <INSTALL OTV INTO CRYO LOAD FAC>

Hazard Level(*): 1 None

Activity: ATTACH SLING TO OTV STRUCTURE- ATTACH TO O/H CRANE-REMOVE HOLDOWN
HARDWARE-LIFT OTV FROM TRANSPORTER-INSTALL OTV IN CRYO STAND

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(5)	(0)
Inspector	(2)	(0)
Other	(0)	
Sub Total	(8)	(0)
		Total (8)
		Total Manhours (32.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	40 40 50 [W/D/H][ft]	10 Ton	45 Ft.Hook Height
Doors:	35 45 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	20 Ton	70 Ft.Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]:	NA
Cleanliness:	100K	E.C.S: Humidity:	Temperature:
		50 +/- 5 %	70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	NA
Fuel/Oxidizer Disposal:	Y	Helium Supply:	NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	Y
Lightning Protection:	Y	Potable Water:	Y
Commerical Telephone:	Y	RF System(*):	N
Personnel Airlock:	Y	Grounding:	Y
		Explosion Proof:	NA

Detailed Equipment Resources

Special Tool Kit:	Y	Slings:	Y	OTV Adapter:	Y
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	Y
NASA Canister:	NA	OTV Canister:	Y		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 9 OTV CRYO LOAD AND DRAIN

Subtask No: < 9.0200> Description: <CONNECT CRYO LINES TO VEHICLE >
 Hazard Level(*): 3 Area Clear
 Activity: CONNECT CRYO LOADING LINES TO OTV.

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 5 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (8)	Total (8)

Serial Time To Complete: 240 min

Total Manhours (32.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: NA

Cleanliness: 100K E.C.S: Humidity: 50 +/- 5 % Temperature: 70 +/- 5 F

Closed Circuit Television: Y Power Cutoff: NA Facility GN2: NA

Fuel/Oxidizer Disposal: Y Helium Supply: NA Shop Air: NA

Fire Protection/Deluge(*): A Shower/Eye Wash: Y Vacuum: NA

Lightning Protection: Y Potable Water: Y Paging: Y

Commerical Telephone: Y RF System(*): N OIS: NA

Personnel Airlock: Y Grounding: Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 9 OTV CRYO LOAD AND DRAIN

Subtask No: < 9.0300> Description: <LOAD CRYO IN OTV
Hazard Level(*): 4 Facility Clear
Activity: LOAD CRYO TO PREDEFINED LEVEL AND PRESSURE.

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (0)	(2)
Shop (0)	(2)
Inspector (0)	(2)
Other (0)	
Sub Total (0)	Total (6)
	Total Manhours (24.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: Y	Power Cutoff: Y
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): B	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 9 OTV CRYO LOAD AND DRAIN

Subtask No: < 9.0400> Description: <VERIFY CRYO LOAD PARAMETERS >
 Hazard Level(*): 4 Facility Clear
 Activity: USE THE OTVCS TO VERIFY ALL CRYO LOAD PARAMETERS

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (0)	(2)
Shop (0)	(2)
Inspector (0)	(2)
Other (0)	
Sub Total (0)	Total (6)
	Total Manhours (6.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: Y	Power Cutoff: Y
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): B	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 9 OTV CRYO DRAIN AND PURGE

Subtask No: < 9.0500> Description: <LOAD FUEL CELLS >

Hazard Level(*): 4 Facility Clear

Activity: LOAD FUEL CELLS AND VERIFY ALL LOAD PARAMETERS

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (0)	(2)
Shop (0)	(2)
Inspector (0)	(2)
Other (0)	
Sub Total (0)	Total (6)
	Total Manhours (24.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: Y

Cleanliness: 100K E.C.S: Humidity: 50 +/- 5 % Temperature: 70 +/- 5 F

Closed Circuit Television: Y Power Cutoff: Y Facility GN2: NA

Fuel/Oxidizer Disposal: Y Helium Supply: NA Shop Air: NA

Fire Protection/Deluge(*): B Shower/Eye Wash: Y Vacuum: NA

Lightning Protection: Y Potable Water: Y Paging: Y

Commerical Telephone: Y RF System(*): A OIS: NA

Personnel Airlock: Y Grounding: Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 9 OTV CRYO DRAIN AND PURGE

Subtask No: < 9.0600> Description: <DRAIN CRYO AND PURGE >
Hazard Level(*): 4 Facility Clear
Activity: USING CRYO CART, UNLOAD CRYO AND PURGE-VERIFY CRYO LIMITS PER INSPECTION KIT
Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 2 }
Shop	{ 0 }	{ 2 }
Inspector	{ 0 }	{ 2 }
Other	{ 0 }	
Sub Total	(0)	(6)
		Total (6)

Serial Time To Complete: 240 min

Total Manhours (24.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity:	Temperature:
	50 +/- 5 %	70 +/- 5 F
Closed Circuit Television: Y	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: Y	Helium Supply: Y	Shop Air: NA
Fire Protection/Deluge(*): B	Shower/Eye Wash: Y	Vacuum: NA
Lightning Protection: Y	Potable Water: Y	Paging: Y
Commerical Telephone: Y	RF System(*): A	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 9 OTV CRYO DRAIN AND PURGE

Subtask No: < 9.0700> Description: <FUEL CELL POWER TEST >
Hazard Level(*): 4 Facility Clear
Activity: VERIFY OTV BUS POWER IS APPLIED VIA GPU. ACTIVATE FUEL CELLS. APPLY OTV LOAD TO FUEL CELL POWER UNIT. VERIFY, APPLY LOADS TO GPU. REMOVE POWER.
Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (0)	(2)
Shop (0)	(2)
Inspector (0)	(2)
Other (0)	
Sub Total (0)	Total (6)
	Total Manhours (24.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: Y	Power Cutoff: Y
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): B	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): A
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 9 OTV CRYO LOAD AND DRAIN

Subtask No: < 9.0800> Description: <DISCONNECT CRYO LINES >
 Hazard Level(*): 3 Area Clear
 Activity: DISCONNECT ALL CRYO LINES FROM OTV

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (5)	(0)
Inspector (2)	(0)
Other (0)	
Sub Total (8)	Total (8)

Serial Time To Complete: 80 min

Total Manhours (8.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: Y	Power Cutoff: Y
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): B	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): A
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 10 MOVE OTV TO INT FACILITY

Subtask No: < 10.0100> Description: <REMOVE OTV FROM THE CRYO STAND>

Hazard Level(*): 2 Local Clear

Activity: ATTACH SLING TO OTV STRUCTURE-ATTACH TO O/H CRANE-REMOVE HOLDDOWN

HARDWARE-LIFT OTV FROM CRYO STAND

Personnel:

Vehicle		Control Station	
Payload Specialist(s)	(0)		(0)
Engineering	(1)		(0)
Shop	(5)		(0)
Inspector	(2)		(0)
Other	(0)		
Sub Total		(8)	
			Total (8)
		Total Manhours (16.0)	

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	35	45	[W/H][ft]		
High Bay:	70	100	85 [W/D/H][ft]	20 Ton	70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity:	Temperature:
	50 +/- 5 %	70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: Y	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: Y	Vacuum: NA
Lightning Protection: Y	Potable Water: Y	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 10 MOVE OTV TO INT FACILITY

Subtask No: < 10.0200> Description: <INSTALL OTV INTO TRANSPORTER >
Hazard Level(*): 2 Local Clear
Activity: INSTALL OTV INTO TRANSPORTER-SECURE

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 5 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (8)	Total (8)

Serial Time To Complete: 180 min Total Manhours (24.0)

Automation Need: (Primary Key)

Automation Secondary Key(s) : : :
: : :

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 40 40 50 [W/D/H][ft]	10 Ton 45 Ft.Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K E.C.S: Humidity: 50 +/- 5 % Temperature: 70 +/- 5 F
Closed Circuit Television: NA Power Cutoff: NA Facility GN2: NA
Fuel/Oxidizer Disposal: N Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: Y Potable Water: NA Paging: Y
Commerical Telephone: Y RF System(*): N OIS: NA
Personnel Airlock: Y Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: Y	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 10 MOVE OTV TO INT FACILITY

Subtask No: < 10.0400> Description: <MOVE TRANSPORTER INTO AIRLOCK >

Hazard Level(*): 1 None

Activity: ATTACH SLING TO OTV STRUCTURE-ATTACH TO O/H CRANE-REMOVE HOLDDOWN HARDWARE-LIFT OTV INTO AIRLOCK

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 5 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(8)	Total (8)

Serial Time To Complete: 120 min

Total Manhours (16.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	40 40 50	[W/D/H][ft]	10 Ton	45 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: Y	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 10 MOVE OTV TO INT FACILITY

Subtask No: < 10.0500> Description: <INSTALL OTV INTO WORKSTAND >
Hazard Level(+): 2 Local Clear
Activity: ATTACH SLINGS TO OTV STRUCTURE-ATTACH TO O/H CRANE-INSTALL/SECURE
OTV ON WORKSTAND-INSTALL HOLDDOWN HARDWARE
Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(5)	(0)
Inspector	(2)	(0)
Other	(0)	
Sub Total	(8)	(0)
		Total (8)
		Total Manhours (32.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	35 45 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	20 Ton	70 Ft.Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness:	100K	E.C.S: Humidity:	Temperature:
		50 +/- 5 %	70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	Facility GN2: NA
Fuel/Oxidizer Disposal:	N	Helium Supply:	Shop Air: NA
Fire Protection/Deluge(+):	A	Shower/Eye Wash:	Vacuum: NA
Lightning Protection:	Y	Potable Water:	Paging: Y
Commerical Telephone:	NA	RF System(+):	OIS: NA
Personnel Airlock:	Y	Grounding:	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit:	Y	Slings:	Y	OTV Adapter:	Y
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	Y
NASA Canister:	NA	OTV Canister:	NA		

(+) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 11 OTV SPACECRAFT MATE

Subtask No: < 11.0100> Description: <MECHANICALLY MATE OTV TO S/C >
Hazard Level(*): 2 Local Clear
Activity: USING S/C ADAPTER HARDWARE, MECHANICALLY MATE OTV AND SPACECRAFT

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 6 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(9)	Total (9)

Serial Time To Complete: 480 min

Total Manhours (72.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	70	100	85 [W/D/H][ft]	20 Ton	70 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 11 OTV SPACECRAFT MATE

Subtask No: < 11.0200> Description: <ELECTRICALLY MATE OTV TO S/C >
 Hazard Level(*): 1 None
 Activity: VERIFY/CONNECT ALL S/C ELECTRICAL CABLES

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(2)	(0)
Inspector	(1)	(0)
Other	(0)	
Sub Total	(4)	(0)
		Total (4)

Serial Time To Complete: 240 min

Total Manhours (16.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	0 Ton	0 Ft. Hook Height
Doors:	0	0			
High Bay:	70	100	85	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 12 OTV SPACECRAFT INTEGRATION

Subtask No: < 12.0100> Description: <OTV S/C SINGLE POINT GROUND >
 Hazard Level(*): 1 None
 Activity: PERFORM SINGLE POINT GROUND CHECKS BETWEEN OTV AND S/C.

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 2 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(4)	(0)
		Total (4)
		Total Manhours (4.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	0 Ton	0 Ft. Hook Height
Doors:	0	0			
High Bay:	70	100	85	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 12 OTV SPACECRAFT INTEGTATION

Subtask No: < 12.0200>

Description: <CONNECT OTV TO GPU

>

Hazard Level(*): 1 None

Activity: CONNECT OTV TO GROUND POWER UNIT

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 2 }	{ 0 }
Inspector { 1 }	{ 0 }
Other { 0 }	
Sub Total (4)	Total (4)
	Total Manhours (8.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]:	NA	
Cleanliness:	100K	E.C.S: Humidity:	50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	NA	Facility GN2: NA
Fuel/Oxidizer Disposal:	N	Helium Supply:	NA	Shop Air: NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	NA	Vacuum: NA
Lightning Protection:	Y	Potable Water:	NA	Paging: Y
Commerical Telephone:	Y	RF System(*):	N	OIS: NA
Personnel Airlock:	Y	Grounding:	Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	Y	Adapter Cables:	Y	Ground Power Unit:	Y
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 12 OTV SPACECRAFT INTEGRATION

Subtask No: < 12.0300>

Description: <CONNECT S/C TO GPU

>

Hazard Level(*): 1 None

Activity: CONNECT S/C TO S/C GROUND POWER UNIT

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (2)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (4)	Total (0)
	Total Manhours (8.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 12 OTV SPACECRAFT INTEGRATION

Subtask No: < 12.0400> Description: <CONNECT INSTRUMENTATION CABLES>
 Hazard Level(*): 1 None
 Activity: CONNECT OTV INSTRUMENTATION CABLES TO OTV GSE AND S/C INSTRUMENTATION CABLES TO S/C GSE. APPLY POWER TO THE OTV.
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 2 }
Shop	{ 4 }	{ 2 }
Inspector	{ 2 }	{ 2 }
Other	{ 0 }	
Sub Total	(7)	(6)
		Total (13)
Serial Time To Complete: 120 min		Total Manhours (26.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness:	100K	E.C.S: Humidity:	Temperature:
		50 +/- 5 %	70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	Facility GN2: NA
		Y	
Fuel/Oxidizer Disposal:	N	Helium Supply:	Shop Air: NA
		NA	
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	Vacuum: NA
		NA	
Lightning Protection:	Y	Potable Water:	Paging: Y
		NA	
Commerical Telephone:	Y	RF System(*):	OIS: NA
		C	
Personnel Airlock:	Y	Grounding:	Explosion Proof: NA
		Y	

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	Y	Adapter Cables:	Y	Ground Power Unit:	Y
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge=	A: fire protection	RF System=	A: S Band & C Band
	or B: deluge		or B: Ku Band
	or C: both		or C: both
	or N: none		or N: none
Hazard Level=	1: None	Others=	Y: Yes
	or 2: Local Clear		N: No
	or 3: Area Clear		NA: Not Applicable
	or 4: Facility Clear		TD: To Be Determined

Detailed Resources Identification

Task No: 12 OTV SPACECRAFT INTEGRATION
 Subtask No: < 12.0500> Description: <CMD/DATA RF CHECKS>
 Hazard Level(*): 1 None
 Activity: VERIFY TELEMTRY AND COMMAND RF LINKS TO OTV AND S/C

Personnel

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total (4)		Total (6)
		Total Manhours (50.0)

Serial Time To Complete: 300 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Standard Commercial Power:	Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness:	100K	E.C.S: Humidity:	Temperature:
Closed Circuit Television:	NA	50 +/- 5 %	70 +/- 5 F
Fuel/Canister Disposal:	N	Power Cutoff:	Y Facility GN2: NA
Fire Protection/Deluge(*):	A	Helium Supply:	NA Shop Air: NA
Lighting Protection:	Y	Shower/Eye Wash:	NA Vacuum: NA
Commercial Telephone:	Y	Potable Water:	NA Paging: Y
Personnel Airlock:	Y	RF System(*):	C OIS: Y
		Grounding:	Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breaker Boxes:	Y	Adapter Cables:	Y	Ground Power Unit:	Y
Air Bags:	NA	Work Stands:	Y	Special Hoisting Equip:	NA
NASA Adapter:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge=	A: fire protection	RF System=	A: S Band & C Band
	or B: deluge		or B: Ku Band
	or C: both		or C: both
	or N: none		or N: none
Hazard Level=	1: None	Others=	Y: Yes
	or 2: Local Clear		N: No
	or 3: Area Clear		NA: Not Applicable
	or 4: Facility Clear		TD: To Be Determined

Detailed Resources Identification

Task No: 12 OTV SPACECRAFT INTEGRATION

Subtask No: < 12.0600> Description: <OTV S/C INTERFACE TEST >
Hazard Level(*): 1 None
Activity: VERIFY MECHANICAL/ELECTRICAL INTERFACES BETWEEN OTV AND S/C

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total	(4)	(6)
		Total (10)
		Total Manhours (20.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commercial Power:	Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness:	100K	E.C.S. Humidity:	Temperature:
		50 +/- 5 %	70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	Facility GN2: NA
Fuel/Oxidizer Disposal:	N	Helium Supply:	Shop Air: NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	Vacuum: NA
Lightning Protection:	Y	Potable Water:	Paging: Y
Commercial Telephone:	Y	RF System(*):	OIS: Y
Personnel Airlock:	Y	Grounding:	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	Y	Adapter Cables:	Y	Ground Power Unit:	Y
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge=	A: fire protection	RF System=	A: S Band & C Band
	or B: deluge		or B: Ku Band
	or C: both		or C: both
	or N: none		or N: none
Hazard Level=	1: None	Others=	Y: Yes
	or 2: Local Clear		N: No
	or 3: Area Clear		NA: Not Applicable
	or 4: Facility Clear		TD: To Be Determined

Detailed Resources Identification

Task No: 13 OTV/SC/CITE INTERFACE TEST

Subtask No: < 13.0100> Description: <DATA PATH VERIFICATION >

Hazard Level(*): 1 None

Activity: REMOVE PROTECTIVE COVERS, CONFIGURE OTV/SC CONNECTORS AND TEST SET, VERIFY CONTINUITY/ISOLATION ACROSS ALL CONNECTORS, DEMATE, INSPECT CONNECTORS

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(2)
Shop	(2)	(2)
Inspector	(1)	(2)
Other	(0)	
Sub Total	(4)	(6)
		Total (10)

Serial Time To Complete: 480 min

Total Manhours (80.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity:	Temperature:
	50 +/- 5 %	70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): A	OIS: Y
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 13

OTV/SC/CITE INTERFACE TEST

Subtask No: < 13.0200>

Description: <FUNCTIONAL VERIFICATION OF RF >

Hazard Level(*): 1 None

Activity: CONFIGURE OTV/SC TO ASE/ORBITER CONNECTION(S), APPLY OTV GPS POWER
INITIATE OTV/ORBITER DATA EXCHANGE, VERIFY RF LINK, ANALYZE DATA

Personnel:

Vehicle		Control Station	
Payload Specialist(s)	{ 0 }		{ 0 }
Engineering	{ 1 }		{ 2 }
Shop	{ 2 }		{ 2 }
Inspector	{ 1 }		{ 2 }
Other	{ 0 }		
Sub Total _____		(4)	_____ (6)
			Total _____ (10)

Serial Time To Complete: 1200 min

Total Manhours (200.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0		[W/H][ft]	
High Bay:	70	100	85	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commercial Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 % Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: Y	Potable Water: NA Paging: Y
Commercial Telephone: Y	RF System(*): C OIS: Y
Personnel Airlock: Y	Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 14 CLOSEOUT & PREP TO MOVE

Subtask No: < 14.0100> Description: <PREP TO MOVE>
 Hazard Level(*): 1 None
 Activity: DEMATE ELECTRICAL, INSPECT CONNECTORS, INSTALL PROTECTIVE COVERS/DEVICE
 S-INSTALL OTV LIFTING SLING/FIXTURE-REMOVE ATTACH HARDWARE-POSITION TRANSPORTER
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 5 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(8)	Total (8)

Serial Time To Complete: 720 min

Total Manhours (96.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 0 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	20 Ton	70 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 15 INSTALL IN CANISTER

Subtask No: < 15.0100> Description: <INSTALL OTV S/C IN CANISTER >
 Hazard Level(*): 2 Local Clear
 Activity: USING THE VPHD, LOAD THE ASSEMBLED OTV AND S/C INTO THE CANISTER FOR TRANSPORT
 Personnel:

Vehicle		Control Station	
Payload Specialist(s)	{ 0 }		{ 0 }
Engineering	{ 1 }		{ 0 }
Shop	{ 5 }		{ 0 }
Inspector	{ 2 }		{ 0 }
Other	{ 0 }		
Sub Total	(8)		(0)
		Total	(8)
		Total Manhours (32.0)	

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(e)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	40 40 74 [W/D/H][ft]	10 Ton	64 Ft. Hook Height
Doors:	35 71 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	20 Ton	70 Ft. Hook Height
Standard Commerical Power: Y		Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F	
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA	
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA	
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA	
Lightning Protection: Y	Potable Water: NA	Paging: Y	
Commerical Telephone: Y	RF System(*): N	OIS: NA	
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA	

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: Y
NASA Canister: Y	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 15 INSTALL IN CANISTER

Subtask No: < 15.0200> Description: <TRANSPORT CANISTER TO PAD >
Hazard Level(*): 1 None
Activity: TRANSPORT OTV AND S/C TO PAD

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(3)	(0)
Inspector	(1)	(0)
Other	(0)	
Sub Total	(5)	(0)
		Total (5)

Serial Time To Complete: 240 min

Total Manhours (20.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	0 Ton	0 Ft. Hook Height
Doors:	0	0	0		
High Bay:	0	0	0	0 Ton	0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: NA	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: Y	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 16 INSTALL IN RSS PGHM

Subtask No: < 16.0100> Description: <MATE CANISTER TO PCR >
 Hazard Level(*): 2 Local Clear
 Activity: USING MMSE AND O/H CRANE LIFT THE CANISTER FROM TRANSPORTER TO THE PCR.

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(5)	(0)
Inspector	(2)	(0)
Other	(0)	
Sub Total	(8)	(0)
		Total (8)

Serial Time To Complete: 360 min

Total Manhours (48.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0	0	[W/H][ft]	
High Bay:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: NA	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: Y	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 16 INSTALL IN RSS PGHM

Subtask No: < 16.0200> Description: <REMOVE OTV S/C FROM CANISTER >
 Hazard Level(*): 2 Local Clear
 Activity: OPEN CANISTER-TRANSFER OTV AND S/C FROM CANISTER TO PGHM FOR PAD
 OPERATIONS
 Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 5 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total _____ (8)	Total _____ (8)
	Total Manhours (32.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 17 INSTALL BATTERIES AND ORDNANCE

Subtask No: < 17.0100> Description: <CONNECT BATT/ORD TEST SET >
Hazard Level(*): 1 None
Activity: CONNECT TEST SET TO VERIFY BATTERY AND ORDNANCE INSTALLATION

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (4)	(0)
Inspector (2)	(0)
Other (0)	
Sub Total (7)	Total (7)

Serial Time To Complete: 60 min

Total Manhours (7.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 17 INSTALL BATTERIES AND ORDNANCE

Subtask No: < 17.0200>

Description: <INSTALL BATTERIES

>

Hazard Level(*): 1 None

Activity: REMOVE THE ACCESS PANELS-INSTALL BATTERIES-PERFORM THE BATTERY TEST PROCEDURE-CLOSE THE ACCESS PANELS.

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 4 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (7)	Total (7)

Serial Time To Complete: 180 min

Total Manhours (21.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 17 INSTALL BATTERIES AND ORDNANCE

Subtask No: < 17.0300> Description: <INSTALL ORDNANCE >
 Hazard Level(*): 3 Area Clear
 Activity: REMOVE ACCESS PANELS—PERFORM STATIC VOLTAGE CHECKS—INSTALL ORDNANCE—
 PERFORM STATIC VOLTAGE CHECKS—ELECTRICAL CONNECT SQUIBS—REPLACE ACCESS PANELS.
 Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (4)	(0)
Inspector (2)	(0)
Other (0)	
Sub Total (7)	Total (7)

Serial Time To Complete: 360 min

Total Manhours (42.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0	0	[W/H][ft]	
High Bay:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 17 INSTALL BATTERIES AND ORDNANCE

Subtask No: < 17.0400> Description: <DISCONNECT BATT/ORD TEST SET >
 Hazard Level(*): 2 Local Clear
 Activity: DISCONNECT TEST SET-INSPECT AND VERIFY ALL CONNECTORS

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 4 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (7)	Total (7)

Serial Time To Complete: 120 min

Total Manhours (14.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 % Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: Y	Potable Water: NA Paging: Y
Commerical Telephone: Y	RF System(*): N OIS: NA
Personnel Airlock: Y	Grounding: Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 17 INSTALL BATTERIES AND ORDNANCE

Subtask No: < 17.0500> Description: <PERFORM POWER TRANSFER CHECKS >
 Hazard Level(*): 2 Local Clear
 Activity: PERFORM OTV POWER ON TEST-TRANSFER POWER TO BATTERY POWER-PERFORM
 BATTERY POWER CHECKS-TRANSFER POWER TO GPU POWER.
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total	(4)	(6)
		Total (10)

Serial Time To Complete: 120 min

Total Manhours (20.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

:
:
:

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0		[W/H][ft]	
High Bay:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): A
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 18 LOAD OTV RCS

Subtask No: < 18.0100>

Description: <CONNECT RCS CART TO TANK FILL >

Hazard Level(*): 1 None

Activity: CONNECT RCS CART TO TANK FILL FITTINGS-VERIFY TORQUE PER INSPECTION KIT SPECIFICATIONS

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 2 }	{ 0 }
Inspector { 1 }	{ 0 }
Other { 0 }	
Sub Total (4)	Total (4)
	Total Manhours (8.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): A
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 18 LOAD OTV RCS

Subtask No: < 18.0200> Description: <FILL RCS TANKS>
 Hazard Level(*): 4 Facility Clear
 Activity: COMMAND START OF FILL OPERATIONS-VERIFY PRESSURE/TEMP DATA

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (2)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (4)	Total (4)
	Total Manhours (8.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock: 0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors: 0 0 0	[W/H][ft]		
High Bay: 0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y		
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F	
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA	
Fuel/Oxidizer Disposal: Y	Helium Supply: NA	Shop Air: NA	
Fire Protection/Deluge(*): A	Shower/Eye Wash: Y	Vacuum: NA	
Lightning Protection: Y	Potable Water: Y	Paging: Y	
Commerical Telephone: Y	RF System(*): A	OIS: Y	
Personnel Airlock: Y	Grounding: Y	Explosion Proof: Y	

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 18 LOAD OTV RCS

Subtask No: < 18.0300> Description: <DISCONNECT RCS CART >
 Hazard Level(*): 4 Facility Clear
 Activity: DISCONNECT RCS FLEX LINES-DISCONNECT RCS CART

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (2)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (4)	Total (4)

Serial Time To Complete: 120 min

Total Manhours (8.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): A
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 18 LOAD OTV RCS

Subtask No: < 18.0400> Description: <PREP FOR ORBITER INSTALLATION >
 Hazard Level(*): 1 None
 Activity: PREP OTV FOR INSTALLATION INTO ORBITER-DISCONNECT OTV ELECTICALLY
 AND MECHANICALLY. WALK DOWN INSPECTION AND PHOTOGRAPH.
 Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 4 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total _____ (7)	Total _____ (7)
	Total Manhours (56.0)

Serial Time To Complete: 480 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: Temperature:
	50 +/- 5 % 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: Y	Potable Water: NA Paging: Y
Commerical Telephone: Y	RF System(*): A OIS: Y
Personnel Airlock: Y	Grounding: Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 19 INSTALL PAYLOAD IN ORBITER

Subtask No: < 19.0100> Description: <INSTALL PAYLOAD IN ORBITER >
 Hazard Level(*): 2 Local Clear
 Activity: INSTALL PAYLOAD IN ORBITER PAYLOAD BAY USING PGHM

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 5 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total (8)		Total (8)

Serial Time To Complete: 240 min

Total Manhours (32.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power: Y		Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity:	Temperature:	
	50 +/- 5 %	70 +/- 5 F	
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA	
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA	
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA	
Lightning Protection: Y	Potable Water: NA	Paging: Y	
Commerical Telephone: Y	RF System(*): N	OIS: Y	
Personnel Airlock: Y	Grounding: Y	Explosion Proof: Y	

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 19

INSTALL PAYLOAD IN ORBITER

Subtask No: < 19.0200>

Description: <MATE ELEC,MECH SERVICE LINES >

Hazard Level(*): 2 Local Clear

Activity: CONNECT ALL ELECTRICAL AND MECHANICAL FLUID CONNECTIONS REQUIRED FOR LAUNCH.

Personnel:

Vehicle		Control Station	
Payload Specialist(s)	{ 0 }		{ 0 }
Engineering	{ 1 }		{ 0 }
Shop	{ 4 }		{ 0 }
Inspector	{ 2 }		{ 0 }
Other	{ 0 }		
Sub Total	(7)		(0)
		Total	(7)
		Total Manhours	(21.0)

Serial Time To Complete: 180 min

Total Manhours (21.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

:
:
:

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness:	100K	E.C.S: Humidity:	Temperature:
		50 +/- 5 %	70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	Facility GN2: NA
Fuel/Oxidizer Disposal:	N	Helium Supply:	Shop Air: NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	Vacuum: NA
Lightning Protection:	Y	Potable Water:	Paging: Y
Commerical Telephone:	Y	RF System(*):	OIS: Y
Personnel Airlock:	Y	Grounding:	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit:	Y	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	NA	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge=	A: fire protection or B: deluge or C: both or N: none	RF System=	A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level=	1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others=	Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 20 P/L ORBITER I/F VERIFICATION

Subtask No: < 20.0100>

Description: <POWER UP ORBITER

>

Hazard Level(*): 1 None

Activity: APPLY ORBITER POWER PER EPDC PROCEDURES

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 1 }	{ 0 }
Engineering	{ 0 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 0 }	{ 0 }
Other	{ 0 }	{ 0 }
Sub Total	(1)	Total { 0 }
		1 }
		Total Manhours (1.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: Y
Personnel Airlock: Y	Grounding: Y	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 20 P/L ORBITER I/F VERIFICATION

Subtask No: < 20.0200> Description: <POWER UP PAYLOAD
Hazard Level(*): 1 None
Activity: APPLY OTV AND SPACECRAFT POWER-PERFORM TELEMETRY CHECKS.

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total	(4)	(6)
		Total (10)
Serial Time To Complete: 180 min		Total Manhours (30.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 0 [W/H][ft]		
High Bay:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness:	100K	E.C.S: Humidity:	Temperature:
		50 +/- 5 %	70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	Facility GN2: NA
Fuel/Oxidizer Disposal:	N	Helium Supply:	Shop Air: NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	Vacuum: NA
Lightning Protection:	Y	Potable Water:	Paging: Y
Commerical Telephone:	Y	RF System(*):	OIS: Y
Personnel Airlock:	Y	Grounding:	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	NA	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 20 P/L ORBITER I/F VERIFICATION

Subtask No: < 20.0300> Description: <PERFORM CMD TEST VIA MCDS >

Hazard Level(*): 1 None

Activity: ISSUE COMMANDS FROM ORBITER MCDS-VERIFY RESPONSE VIA ORBITER
TELEMETRY

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 2 }
Shop { 2 }	{ 2 }
Inspector { 1 }	{ 2 }
Other { 0 }	
Sub Total (4)	Total (6)
	Total Manhours (40.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): C
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 20 P/L ORBITER I/F VERIFICATION

Subtask No: < 20.0400> Description: <OTV SPACECRAFT HEALTH CHECKS >

Hazard Level(*): 1 None

Activity: PERFORM PAYLOAD HEALTH CHECKS

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(2)
Shop (2)	(2)
Inspector (1)	(2)
Other (0)	
Sub Total (4)	Total (6)
	Total Manhours (20.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Standard Commercial Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commercial Telephone: Y	RF System(*): C
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 21 SPACECRAFT POCC TEST

Subtask No: < 21.0100> Description: <ISSUE S/C COMMANDS FROM POCC >
 Hazard Level(*): 1 None
 Activity: ISSUE COMMANDS FROM POCC VIA TDRSS-KSC TELEMETRY-ORBITER COMMAND AND DATA SYSTEM.
 Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(2)
Shop (2)	(2)
Inspector (1)	(2)
Other (0)	
Sub Total (4)	Total (6)
	Total Manhours (40.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]:	Y
Cleanliness:	100K	E.C.S: Humidity:	Temperature:
		50 +/- 5 %	70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	Y Facility GN2: NA
Fuel/Oxidizer Disposal:	N	Helium Supply:	NA Shop Air: NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	NA Vacuum: NA
Lightning Protection:	Y	Potable Water:	NA Paging: Y
Commerical Telephone:	Y	RF System(*):	C OIS: Y
Personnel Airlock:	Y	Grounding:	Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	NA	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 21 SPACECRAFT POCC TEST

Subtask No: < 21.0200> Description: <VERIFY SPACECRAFT RESPONSE >
 Hazard Level(*): 1 None
 Activity: VERIFY POCC IS ABLE TO ISSUE COMMANDS TO THE SPACECRAFT AND RECIEVE PROPER RESPONSE.
 Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 2 }
Shop { 2 }	{ 2 }
Inspector { 1 }	{ 2 }
Other { 0 }	
Sub Total	Total
(4)	(6)
	Total Manhours (20.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	{ W/D/H } [ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0	0	{ W/H } [ft]	
High Bay:	0	0	0	{ W/D/H } [ft]	0 Ton 0 Ft. Hook Height
Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: Y					
Cleanliness:	100K		E.C.S: Humidity:	Temperature:	
			50 +/- 5 %	70 +/- 5 F	
Closed Circuit Television:	NA		Power Cutoff:	Y Facility GN2: NA	
Fuel/Oxidizer Disposal:	N		Helium Supply:	NA Shop Air: NA	
Fire Protection/Deluge(*):	A		Shower/Eye Wash:	NA Vacuum: NA	
Lightning Protection:	Y		Potable Water:	NA Paging: Y	
Commerical Telephone:	Y		RF System(*):	C OIS: Y	
Personnel Airlock:	Y		Grounding:	Y Explosion Proof: Y	

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 21 SPACECRAFT POC TEST

Subtask No: < 21.0300> Description: <POWER DOWN SPACECRAFT >
Hazard Level(*): 1 None
Activity: REMOVE POWER FROM SPACECRAFT.

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 2 }
Shop { 2 }	{ 2 }
Inspector { 1 }	{ 2 }
Other { 0 }	
Sub Total _____ (4)	_____ { 6 }
	Total _____ { 10 }

Serial Time To Complete: 60 min Total Manhours (10.0)

Automation Need: (Primary Key)

Automation Secondary Key(s) , , ,
 : : :
 . . .

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: Y

Cleanliness: 100K E.C.S: Humidity: Temperature: 50 +/- 5 % 70 +/- 5 F

Closed Circuit Television: NA Power Cutoff: Y Facility GN2: NA

Fuel/Oxidizer Disposal: N Helium Supply: NA Shop Air: NA

Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA

Lightning Protection: Y Potable Water: NA Paging: Y

Commerical Telephone: Y RF System(*): C OIS: Y

Personnel Airlock: Y Grounding: Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 22 FINAL PAYLOAD CLOSEOUT

Subtask No: < 22.0100> Description: <REMOVE BEFORE FLIGHT ITEMS >
Hazard Level(*): 1 None
Activity: REMOVE ALL REMOVE BEFORE FLIGHT ITEMS

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 2 }	{ 0 }
Inspector { 1 }	{ 0 }
Other { 0 }	
Sub Total (4)	Total (4)
	Total Manhours (16.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 22 FINAL PAYLOAD CLOSEOUT

Subtask No: < 22.0200> Description: <APPLY POWER TO SPACECRAFT >
 Hazard Level(*): 1 None
 Activity: APPLY POWER TO THE SPACECRAFT

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 0 }	{ 0 }
Other	{ 0 }	
Sub Total	(0)	Total (0)
		Total Manhours (0.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s) : : :
 : : :
 : : :

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y

Temperature: 70 +/- 5 F	Facility GN2: NA	Shop Air: NA
Vacuum: NA	Paging: Y	OIS: Y
Explosion Proof: Y		

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 22 FINAL PAYLOAD CLOSEOUT

Subtask No: < 22.0300> Description: <COMMAND S/C TO PRE-LAUNCH MODE>
 Hazard Level(*): 1 None
 Activity: SECURE SPACECRAFT SYSTEMS IN PRE-LAUNCH MODE

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 0 }	{ 0 }
Shop { 0 }	{ 0 }
Inspector { 0 }	{ 0 }
Other { 0 }	
Sub Total _____ (0)	Total _____ { 0 }
	Total Manhours (0.0)

Serial Time To Complete: 30 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: Temperature:
	50 +/- 5 % 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: Y	Potable Water: NA Paging: Y
Commerical Telephone: Y	RF System(*): N OIS: Y
Personnel Airlock: Y	Grounding: Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 22 FINAL PAYLOAD CLOSEOUT

Subtask No: < 22.0400> Description: <REMOVE POWER FROM SPACECRAFT >
 Hazard Level(*): 1 None
 Activity: REMOVE SPACECRAFT POWER

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 0 }	{ 0 }
Shop { 0 }	{ 0 }
Inspector { 0 }	{ 0 }
Other { 0 }	
Sub Total _____ (0)	Total _____ { 0 }
	Total Manhours (0.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0	0	[W/H][ft]	
High Bay:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: Temperature:
	50 +/- 5 % 70 +/- 5 F
Closed Circuit Television: Y	Power Cutoff: Y Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: Y	Potable Water: NA Paging: Y
Commerical Telephone: Y	RF System(*): N OIS: Y
Personnel Airlock: Y	Grounding: Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 22 FINAL PAYLOAD CLOSEOUT

Subtask No: < 22.0500> Description: <ENGR INSPECT/FINAL CLOSEOUT >
Hazard Level(*): 1 None
Activity: PERFORM WALKDOWN INSPECTION OF OTV FOR FINAL PAYLOAD BAY CLOSEOUT.
Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 2 }	{ 0 }
Shop { 2 }	{ 0 }
Inspector { 1 }	{ 0 }
Other { 0 }	
Sub Total (5)	Total (5)

Serial Time To Complete: 60 min

Total Manhours (5.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	{ W/D/H } [ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0	0	{ W/H } [ft]	
High Bay:	0	0	0	{ W/D/H } [ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): C
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 23 LAUNCH PREPARATIONS

Subtask No: < 23.0100>

Description: <APPLY POWER TO OTV

>

Hazard Level(*): 1 None

Activity: APPLY POWER TO OTV IN PREPARATION FOR LAUNCH

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total	(4)	(6)
		Total (10)

Serial Time To Complete: 120 min
Total Manhours (20.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

:
:
:

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	W/D/H [ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0	0	W/H [ft]	
High Bay:	0	0	0	W/D/H [ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): A	OIS: Y
Personnel Airlock: Y	Grounding: Y	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 23 LAUNCH PREPARATIONS

Subtask No: < 23.0200> Description: <LOAD/MONITOR CRYO >
Hazard Level(*): 4 Facility Clear
Activity: LOAD CRYO AND MONITOR FOR PRESSURE AND VOLUME(INCLUDE FUEL CELLS)

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (0)	(2)
Shop (0)	(2)
Inspector (0)	(2)
Other (0)	
Sub Total (0)	Total (6)
	Total Manhours (12.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key).

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): C
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 23 LAUNCH PREPARATIONS

Subtask No: < 23.0300> Description: <ACTIVATE/LOAD TEST FUEL CELLS >

Hazard Level(*): 2 Local Clear

Activity: TRANSFER LOAD FROM ORBITER POWER TO OTV FUEL CELL-VERIFY ALL LOAD PARAMETERS

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 2 }
Shop	{ 0 }	{ 2 }
Inspector	{ 0 }	{ 2 }
Other	{ 0 }	
Sub Total	(0)	Total (6)
		Total Manhours (12.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0 0 [W/H][ft]		
High Bay:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness:	100K	E.C.S. Humidity:	Temperature:
		50 +/- 5 %	70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	Y Facility GN2: NA
Fuel/Oxidizer Disposal:	Y	Helium Supply:	NA Shop Air: NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	NA Vacuum: NA
Lightning Protection:	Y	Potable Water:	NA Paging: Y
Commerical Telephone:	Y	RF System(*):	C OIS: Y
Personnel Airlock:	Y	Grounding:	Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	NA	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 23 LAUNCH PREPARATIONS

Subtask No: < 23.0400> Description: <LAUNCH
Hazard Level(+): 4 Facility Clear
Activity: LAUNCH

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (0)	(2)
Shop (0)	(2)
Inspector (0)	(2)
Other (0)	
Sub Total (0)	Total (6)
	Total Manhours (18.0)

Serial Time To Complete: 180 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: OK	E.C.S: Humidity: Temperature:
	0 +/- 0 % 0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(+): N	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: NA	Potable Water: NA Paging: NA
Commerical Telephone: NA	RF System(+): N OIS: NA
Personnel Airlock: NA	Grounding: NA Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(+) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 24 DEPLOY OTV/SPACECRAFT

Subtask No: < 24.0100> Description: <OPEN CARGO BAY DOORS>
 Hazard Level(*): 1 None
 Activity: OPEN CARGO BAY IN PREPARATION OF PLACING OTC/SC IN LEO

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 1 }	{ 0 }
Engineering { 0 }	{ 0 }
Shop { 0 }	{ 0 }
Inspector { 0 }	{ 0 }
Other { 0 }	
Sub Total (1)	Total { 0 }
	Total Manhours (1.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: OK	E.C.S: Humidity: Temperature:
	0 +/- 0 % 0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: NA	Potable Water: NA Paging: NA
Commerical Telephone: NA	RF System(*): C OIS: NA
Personnel Airlock: NA	Grounding: NA Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 24 DEPLOY OTV/SPACECRAFT

Subtask No: < 24.0200>

Description: <POWER UP SPACECRAFT

>

Hazard Level(*): 1 None

Activity: COMMAND THE SPACECRAFT POWER ON.

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 1 }	{ 0 }
Engineering { 0 }	{ 2 }
Shop { 0 }	{ 2 }
Inspector { 0 }	{ 2 }
Other { 0 }	
Sub Total (1)	Total (6)
	Total Manhours (7.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft. Hook Height
Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: OK	E.C.S: Humidity: 0 +/- 0 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: NA	Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA
Lightning Protection: NA	Potable Water: NA
Commerical Telephone: NA	RF System(*): C
Personnel Airlock: NA	Grounding: NA
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 24 DEPLOY OTV/SPACECRAFT

Subtask No: < 24.0300> Description: <PAYLOAD VERIFICATION TEST >
 Hazard Level(*): 1 None
 Activity: PERFORM SYSTEM VERIFICATION TESTING TO VERIFY OTV AND S/C ARE READY FOR LAUNCH INTO GEO
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 1 }	{ 0 }
Engineering	{ 0 }	{ 2 }
Shop	{ 0 }	{ 2 }
Inspector	{ 0 }	{ 2 }
Other	{ 0 }	
Sub Total	(1)	(6)
		Total (7)

Serial Time To Complete: 240 min

Total Manhours (28.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: OK	E.C.S: Humidity:	Temperature:
	0 +/- 0 %	0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: NA	Potable Water: NA	Paging: NA
Commerical Telephone: NA	RF System(*): C	OIS: NA
Personnel Airlock: NA	Grounding: NA	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 24 DEPLOY OTV/SPACECRAFT

Subtask No: < 24.0400> Description: <REMOVE PAYLOAD FROM CARGO BAY >
 Hazard Level(*): 1 None
 Activity: PREPARE FOR OTV/SC AEROBRAKE INSTALLATION

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(2)	(0)
Engineering	(0)	(2)
Shop	(0)	(2)
Inspector	(0)	(2)
Other	(0)	
Sub Total	(2)	(6)
		(8)
		Total (16.0)

Serial Time To Complete: 120 min

Total Manhours (16.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power: NA			Instrumentation Power [Uninterrupted]: NA		
Cleanliness:	OK		E.C.S: Humidity:	Temperature:	
			0 +/- 0 %	0 +/- 0 F	
Closed Circuit Television:	NA		Power Cutoff:	NA Facility GN2: NA	
Fuel/Oxidizer Disposal:	NA		Helium Supply:	NA Shop Air: NA	
Fire Protection/Deluge(*):	N		Shower/Eye Wash:	NA Vacuum: NA	
Lightning Protection:	NA		Potable Water:	NA Paging: NA	
Commerical Telephone:	NA		RF System(*):	C OIS: NA	
Personnel Airlock:	NA		Grounding:	NA Explosion Proof: NA	

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 24 DEPLOY OTV/SPACECRAFT

Subtask No: < 24.0500> Description: <ELEC, MECH FLUID DISCONNECT >
 Hazard Level(*): 1 None
 Activity: REMOVE ALL ELECTRICAL, MECHANICAL AND FLUID INTERFACES BETWEEN THE ORBITER AND THE OTV.
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 1 }	{ 0 }
Engineering	{ 0 }	{ 2 }
Shop	{ 0 }	{ 2 }
Inspector	{ 0 }	{ 2 }
Other	{ 0 }	
Sub Total	(1)	(6)
		Total (7)

Serial Time To Complete: 60 min Total Manhours (7.0)

Automation Need: (Primary Key)

Automation Secondary Key(s) : : :
 : : :
 : : :

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 0 [W/H][ft]		
High Bay:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: NA Instrumentation Power [Uninterrupted]: NA
 Cleanliness: 0K E.C.S: Humidity: Temperature:
 0 +/- 0 % 0 +/- 0 F
 Closed Circuit Television: NA Power Cutoff: NA Facility GN2: NA
 Fuel/Oxidizer Disposal: NA Helium Supply: NA Shop Air: NA
 Fire Protection/Deluge(*): N Shower/Eye Wash: NA Vacuum: NA
 Lightning Protection: NA Potable Water: NA Paging: NA
 Commerical Telephone: NA RF System(*): C OIS: NA
 Personnel Airlock: NA Grounding: NA Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 24 DEPLOY OTV/SPACECRAFT

Subtask No: < 24.0600> Description: <INSTALL/DEPLOY AEROBRAKE >
 Hazard Level(*): 1 None
 Activity: INSTALL/DEPLOY AEROBRAKE SYSTEM IN LEO IF REQUIRED

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(3)	(0)
Engineering	(0)	(0)
Shop	(0)	(0)
Inspector	(0)	(0)
Other	(0)	
Sub Total	(3)	(0)
		Total (3)
		Total Manhours (6.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0	0	[W/H][ft]	
High Bay:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: OK	E.C.S: Humidity: 0 +/- 0 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA
Lightning Protection: NA	Potable Water: NA
Commerical Telephone: NA	RF System(*): C
Personnel Airlock: NA	Grounding: NA
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 24 DEPLOY OTV/SPACECRAFT

Subtask No: < 24.0700> Description: <PERFORM POCC LAUNCH TESTS >
 Hazard Level(*): 1 None
 Activity: ISSUE COMMAND AND VERIFY OTV AND S/C READY FOR LAUNCH TO GEO

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 1 }	{ 0 }
Engineering	{ 0 }	{ 2 }
Shop	{ 0 }	{ 2 }
Inspector	{ 0 }	{ 2 }
Other	{ 0 }	
Sub Total	(1)	(6)
		Total (7)

Serial Time To Complete: 60 min

Total Manhours (7.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0		[W/H][ft]	
High Bay:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 0K	E.C.S: Humidity: 0 +/- 0 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA
Lightning Protection: NA	Potable Water: NA
Commerical Telephone: NA	RF System(*): C
Personnel Airlock: NA	Grounding: NA
	Explosion Proof: NA
	Temperature: 0 +/- 0 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: NA
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 24 DEPLOY OTV/SPACECRAFT

Subtask No: < 24.0800> Description: <DEPLOY OTV S/C FROM ORBITER >
 Hazard Level(*): 1 None
 Activity: DEPLOY COMBINATION OTV AND SPACECRAFT IN LEO-MOVE THE ORBITER TO
 A SAFE DISTANCE FROM THE OTV
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	(1)	(0)
Engineering	(0)	(2)
Shop	(0)	(2)
Inspector	(0)	(2)
Other	(0)	
Sub Total	(1)	(6)
		Total (7)

Serial Time To Complete: 60 min Total Manhours (7.0)

Automation Need: (Primary Key)

Automation Secondary Key(s) : : :
 : : :
 : : :

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: OK	E.C.S: Humidity: 0 +/- 0 %	Temperature: 0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Hellum Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: NA	Potable Water: NA	Paging: NA
Commerical Telephone: NA	RF System(*): C	OIS: NA
Personnel Airlock: NA	Grounding: NA	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 25 LAUNCH FROM LEO

Subtask No: < 25.0100>

Description: <VERIFY NAV POSITION

>

Hazard Level(*): 1 None

Activity: VERIFY POC NAV UPDATE IS RECEIVED AND NAV COMPUTER HAS UPDATED INFORMATION

Personnel:

Vehicle		Control Station	
Payload Specialist(s)	{ 0 }		{ 0 }
Engineering	{ 0 }		{ 2 }
Shop	{ 0 }		{ 2 }
Inspector	{ 0 }		{ 2 }
Other	{ 0 }		
Sub Total	(0)		(6)
		Total	(6)
Serial Time To Complete:	60 min	Total Manhours	(6.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0 0 [W/H][ft]		
High Bay:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power:	NA	Instrumentation Power [Uninterrupted]:	NA
Cleanliness:	OK	E.C.S: Humidity:	Temperature:
		0 +/- 0 %	0 +/- 0 F
Closed Circuit Television:	NA	Power Cutoff:	NA
		Facility GN2:	NA
Fuel/Oxidizer Disposal:	NA	Helium Supply:	NA
Shop Air:	NA		
Fire Protection/Deluge(*):	N	Shower/Eye Wash:	NA
Vacuum:	NA		
Lightning Protection:	NA	Potable Water:	NA
Paging:	NA		
Commerical Telephone:	NA	RF System(*):	C
OIS:	NA		
Personnel Airlock:	NA	Grounding:	NA
Explosion Proof:	NA		

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	NA	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge=	A: fire protection	RF System=	A: S Band & C Band
	or B: deluge		or B: Ku Band
	or C: both		or C: both
	or N: none		or N: none
Hazard Level:=	1: None	Others:=	Y: Yes
	or 2: Local Clear		N: No
	or 3: Area Clear		NA: Not Applicable
	or 4: Facility Clear		TD: To Be Determined

Detailed Resources Identification

Task No: 25 LAUNCH FROM LEO

Subtask No: < 25.0200> Description: <VERIFY PROPULSION SYSTEM >

Hazard Level(*): 1 None

Activity: VERIFY TANK PRESSURES ARE NORMAL-VERIFY ENGINES CONTROL

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 2 }
Shop	{ 0 }	{ 2 }
Inspector	{ 0 }	{ 2 }
Other	{ 0 }	
Sub Total	(0)	Total (6)
		Total Manhours (6.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:
Air Lock: 0 0 0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0 0	[W/H][ft]	
High Bay: 0 0 0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: OK	E.C.S: Humidity: 0 +/- 0 %	Temperature: 0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: NA	Potable Water: NA	Paging: NA
Commerical Telephone: NA	RF System(*): C	OIS: NA
Personnel Airlock: NA	Grounding: NA	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 25 LAUNCH FROM LEO

Subtask No: < 25.0300> Description: <LAUNCH TO GEO >

Hazard Level(*): 1 None

Activity: ISSUE COMMAND VIA POCC TO LAUNCH TO GEO

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 0 }	{ 2 }
Shop { 0 }	{ 2 }
Inspector { 0 }	{ 2 }
Other { 0 }	
Sub Total (0)	Total (6)
	Total Manhours (24.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: NA Instrumentation Power [Uninterrupted]: NA

Cleanliness: 0K

E.C.S: Humidity:
0 +/- 0 %

Temperature:
0 +/- 0 F

Closed Circuit Television: NA

Power Cutoff: NA

Facility GN2: NA

Fuel/Oxidizer Disposal: NA

Helium Supply: NA

Shop Air: NA

Fire Protection/Deluge(*): N

Shower/Eye Wash: NA

Vacuum: NA

Lightning Protection: NA

Potable Water: NA

Paging: NA

Commerical Telephone: NA

RF System(*): C

OIS: NA

Personnel Airlock: NA

Grounding: NA

Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA

Slings: NA

OTV Adapter: NA

Breakout Boxes: NA

Adapter Cables: NA

Ground Power Unit: NA

Air Pallet: NA

Work Stands: NA

Special Hoisting Equip: NA

NASA Canister: NA

OTV Canister: NA

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 26 PERFORM MISSION

Subtask No: < 26.0100>

Description: <DEPLOY SPACECRAFT

>

Hazard Level(*): 1 None

Activity: ISSUE COMMAND TO RELEASE THE SPACECRAFT IN GEO

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(0)	(2)
Shop	(0)	(2)
Inspector	(0)	(2)
Other	(0)	
Sub Total	(0)	(6)
		Total (6)
		Total Manhours (6.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0	0	[W/H][ft]	
High Bay:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 0K	E.C.S: Humidity: Temperature:
	0 +/- 0 % 0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: NA	Potable Water: NA Paging: NA
Commerical Telephone: NA	RF System(*): C OIS: NA
Personnel Airlock: NA	Grounding: NA Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 27 ORIENT AND RTN FROM GEO TO LEO

Subtask No: < 27.0100>

Description: <ISSUE NAV UPDATE

>

Hazard Level(*): 1 None

Activity: POCC ISSUE NAV UPDATE-VERIFY COMPUTER RESPOND TO NEW NAV UPDATE

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 0 }	{ 2 }
Shop { 0 }	{ 2 }
Inspector { 0 }	{ 2 }
Other { 0 }	
Sub Total (0)	Total (6)

Serial Time To Complete: 60 min

Total Manhours (6.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 0K	E.C.S: Humidity: 0 +/- 0 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA
Lightning Protection: NA	Potable Water: NA
Commerical Telephone: NA	RF System(*): C
Personnel Airlock: NA	Grounding: NA
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 27 ORIENT AND RTN FROM GEO TO LEO

Subtask No: < 27.0200> Description: <POSITION OTV TO DE-ORBIT >
 Hazard Level(*): 1 None
 Activity: USING RCS, POSITION OTV FOR RETURN TO LEO

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 0 }	{ 2 }
Shop { 0 }	{ 2 }
Inspector { 0 }	{ 2 }
Other { 0 }	
Sub Total _____ (0)	Total _____ { 6 }
	Total Manhours (6.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power:	NA		Instrumentation Power [Uninterrupted]: NA	
Cleanliness:	0K		E.C.S: Humidity:	Temperature:
			0 +/- 0 %	0 +/- 0 F
Closed Circuit Television:	NA		Power Cutoff:	Facility GN2: NA
Fuel/Oxidizer Disposal:	NA		Helium Supply:	Shop Air: NA
Fire Protection/Deluge(*):	N		Shower/Eye Wash:	Vacuum: NA
Lightning Protection:	NA		Potable Water:	Paging: NA
Commerical Telephone:	NA		RF System(*):	OIS: NA
Personnel Airlock:	NA		Grounding:	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 27 ORIENT AND RTN FROM GEO TO LEO

Subtask No: < 27.0300>

Description: <FIRE ENGINES

>

Hazard Level(*): 1 None

Activity: VERIFY ENGINE FIRE UNDER COMPUTER CONTROL PER FLIGHT PROCEDURES

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 2 }
Shop	{ 0 }	{ 2 }
Inspector	{ 0 }	{ 2 }
Other	{ 0 }	
Sub Total	(0)	(6)
		Total (6)
		Total Manhours (6.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

:
:
:

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: OK	E.C.S: Humidity:	Temperature:
	0 +/- 0 %	0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: NA	Potable Water: NA	Paging: NA
Commerical Telephone: NA	RF System(*): C	OIS: NA
Personnel Airlock: NA	Grounding: NA	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 27 ORIENT AND RTN FROM GEO TO LEO

Subtask No: < 27.0400> Description: <ORBIT IN LEO>
 Hazard Level(*): 1 None
 Activity: INSERT OTV INTO LEO UNDER COMPUTER CONTROL

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 2 }
Shop	{ 0 }	{ 2 }
Inspector	{ 0 }	{ 2 }
Other	{ 0 }	
Sub Total	(0)	(6)
		Total (6)

Serial Time To Complete: 240 min Total Manhours (24.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	0 Ton	0 Ft. Hook Height
Doors:	0	0	0		
High Bay:	0	0	0	0 Ton	0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 0K	E.C.S: Humidity: 0 +/- 0 % Temperature: 0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: NA	Potable Water: NA Paging: NA
Commerical Telephone: NA	RF System(*): C OIS: NA
Personnel Airlock: NA	Grounding: NA Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 28 ORBITER AND OTV RENDEZVOUS

Subtask No: < 28.0100> Description: <POSITION OTV IN STANDOFF ORBIT >

Hazard Level(*): 1 None

Activity: TRANSFER OTV TO RENDEZVOUS ZONE. POSITION ORBITER IN STANDOFF POSITION.

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (0)	(2)
Shop (0)	(2)
Inspector (0)	(2)
Other (0)	
Sub Total (0)	Total (6)
	Total Manhours (24.0)

Serial Time To Complete: 240 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 0K	E.C.S: Humidity: 0 +/- 0 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: NA	Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA
Lightning Protection: NA	Potable Water: NA
Commerical Telephone: NA	RF System(*): C
Personnel Airlock: NA	Grounding: NA
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 29 OTV RECOVERY

Subtask No: < 29.0100> Description: <RETRACT EEC, VERIFY OTV SAFE >

Hazard Level(*): 1 None

Activity: ISSUE COMMANDS FROM ORBITER OR OTVCC TO RETRACT THE EEC. SHUTDOWN /SAFE OTV FOR LOADING

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (0)	(2)
Shop (0)	(2)
Inspector (0)	(2)
Other (0)	
Sub Total (0)	Total (6)
	Total Manhours (12.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: OK	E.C.S: Humidity: 0 +/- 0 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA
Lightning Protection: NA	Potable Water: NA
Commerical Telephone: NA	RF System(*): C
Personnel Airlock: NA	Grounding: NA
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 29 OTV RECOVERY

Subtask No: < 29.0200> Description: <VENT OTV CRYO SYSTEM >
 Hazard Level(*): 1 None
 Activity: CONNECT ELECTRICAL, MECHANICAL, AND FLUID SYSTEMS TO VENT THE OTV CRYO SYSTEM
 Personnel:

Vehicle	Control Station
Payload Specialist(s) (2)	(0)
Engineering (0)	(0)
Shop (0)	(0)
Inspector (0)	(0)
Other (0)	
Sub Total (2)	Total (2)

Serial Time To Complete: 240 min

Total Manhours (8.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: OK	E.C.S: Humidity: 0 +/- 0 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA
Lightning Protection: NA	Potable Water: NA
Commerical Telephone: NA	RF System(*): C
Personnel Airlock: NA	Grounding: NA
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 29 OTV RECOVERY

Subtask No: < 29.0300>

Description: <OTV CAPTURE

Hazard Level(*): 1 None

Activity: USING THE ORBITER GRAPPLE FIXTURE CAPTURE THE OTV AND COMPONENTS

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(2)	(0)
Engineering	(0)	(0)
Shop	(0)	(0)
Inspector	(0)	(0)
Other	(0)	
Sub Total	(2)	(0)
		Total (2)

Serial Time To Complete: 80 min

Total Manhours (2.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: NA

Instrumentation Power [Uninterrupted]: NA

Cleanliness: BK

E.C.S: Humidity:

Temperature:

0 +/- 0 %

0 +/- 0 F

Closed Circuit Television: NA

Power Cutoff: NA

Facility GN2: NA

Fuel/Oxidizer Disposal: NA

Helium Supply: NA

Shop Air: NA

Fire Protection/Deluge(*): N

Shower/Eye Wash: NA

Vacuum: NA

Lightning Protection: NA

Potable Water: NA

Paging: NA

Commerical Telephone: NA

RF System(*): C

OIS: NA

Personnel Airlock: NA

Grounding: NA

Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA

Slings: NA

OTV Adapter: NA

Breakout Boxes: NA

Adapter Cables: NA

Ground Power Unit: NA

Air Pallet: NA

Work Stands: NA

Special Hoisting Equip: NA

NASA Canister: NA

OTV Canister: NA

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 29 OTV RECOVERY

Subtask No: < 29.0400> Description: <REMOVE AND STORE THE AEROBRAKE>
 Hazard Level(*): 1 None
 Activity: USING THE SPECIAL TOOL KIT, PERFORM THE EVA TO REMOVE AND STORE THE AERO BRAKE.
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 3 }	{ 0 }
Engineering	{ 0 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 0 }	{ 0 }
Other	{ 0 }	
Sub Total	(3)	(0)
		Total (3)
		Total Manhours (9.0)

Serial Time To Complete: 180 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors:	0	0	0	[W/H][ft]	
High Bay:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: OK	E.C.S: Humidity: 0 +/- 0 % Temperature: 0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: NA	Potable Water: NA Paging: NA
Commerical Telephone: NA	RF System(*): C OIS: NA
Personnel Airlock: NA	Grounding: NA Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 29 OTV RECOVERY

Subtask No: < 29.0500> Description: <LOAD OTV IN THE ORBITER BAY >
 Hazard Level(*): 1 None
 Activity: LOAD AND SECURE THE OTV INTO THE ORBITER PAYLOAD BAY. CLOSE ORBITER PAYLOAD BAY DOORS.
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	(3)	(0)
Engineering	(0)	(0)
Shop	(0)	(0)
Inspector	(0)	(0)
Other	(0)	
Sub Total		(3)
		Total (3)

Serial Time To Complete: 120 min

Total Manhours (6.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

:
:
:

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: OK	E.C.S: Humidity: Temperature:
	0 +/- 0 % 0 +/- 0 F
Closed Circuit Television: NA	Power Cutoff: NA Facility GN2: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA Shop Air: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA Vacuum: NA
Lightning Protection: NA	Potable Water: NA Paging: NA
Commerical Telephone: NA	RF System(*): C OIS: NA
Personnel Airlock: NA	Grounding: NA Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 29 OTV RECOVERY

Subtask No: < 29.0600>

Description: <PREPARE OTV FOR DEORBIT >

Hazard Level(*): 1 None

Activity: SECURE OTV FOR DEORBIT

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 2 }	{ 0 }
Engineering	{ 0 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 0 }	{ 0 }
Other	{ 0 }	
Sub Total	(2)	Total (2)

Serial Time To Complete: 180 min

Total Manhours (6.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: NA	Instrumentation Power [Uninterrupted]: NA
Cleanliness: OK	E.C.S: Humidity: 0 +/- 0 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: NA	Helium Supply: NA
Fire Protection/Deluge(*): N	Shower/Eye Wash: NA
Lightning Protection: NA	Potable Water: NA
Commerical Telephone: NA	RF System(*): C
Personnel Airlock: NA	Grounding: NA
	Explosion Proof: NA
	Temperature: 0 +/- 0 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: NA
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 30 RETURN TO LAUNCH SITE

Subtask No: < 30.0100>

Description: <DE-ORBIT

Hazard Level(*): 1 None

Activity: RE-ENTER EARTH'S ATMOSPHERE

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 0 }	{ 0 }
Other	{ 0 }	
Sub Total _____ (0)		Total _____ (0)
		Total Manhours (0.0)

Serial Time To Complete: 0 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Standard Commerical Power: NA		Instrumentation Power [Uninterrupted]: NA		
Cleanliness:	0K	E.C.S: Humidity:	Temperature:	
		0 +/- 0 %	0 +/- 0 F	
Closed Circuit Television:	NA	Power Cutoff:	NA	Facility GN2: NA
Fuel/Oxidizer Disposal:	NA	Helium Supply:	NA	Shop Air: NA
Fire Protection/Deluge(*):	N	Shower/Eye Wash:	NA	Vacuum: NA
Lightning Protection:	NA	Potable Water:	NA	Paging: NA
Commerical Telephone:	NA	RF System(*):	N	OIS: NA
Personnel Airlock:	NA	Grounding:	NA	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 30 RETURN TO LAUNCH SITE

Subtask No: < 30.0200> Description: <LAND AT KSC>

Hazard Level(*): 1 None

Activity: LAND SHUTTLE AT KSC SHUTTLE LANDING FACILITY

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 0 }	{ 0 }
Other	{ 0 }	
Sub Total	(0)	Total (0)

Serial Time To Complete: 0 min

Total Manhours (0.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors:	0	0	0	[W/H][ft]	
High Bay:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: NA Instrumentation Power [Uninterrupted]: NA

Cleanliness: 0K

E.C.S: Humidity:
0 +/- 0 %

Temperature:
0 +/- 0 F

Closed Circuit Television: NA

Power Cutoff: NA

Facility GN2: NA

Fuel/Oxidizer Disposal: NA

Helium Supply: NA

Shop Air: NA

Fire Protection/Deluge(*): N

Shower/Eye Wash: NA

Vacuum: NA

Lightning Protection: NA

Potable Water: NA

Paging: NA

Commerical Telephone: NA

RF System(*): N

OIS: NA

Personnel Airlock: NA

Grounding: NA

Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA

Slings: NA

OTV Adapter: NA

Breakout Boxes: NA

Adapter Cables: NA

Ground Power Unit: NA

Air Pallet: NA

Work Stands: NA

Special Hoisting Equip: NA

NASA Canister: NA

OTV Canister: NA

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 31 REMOVE OTV FROM ORBITER

Subtask No: < 31.0100>

Description: <MOVE ORBITER TO OPF

>

Hazard Level(*): 1 None

Activity: MOVE ORBITER TO OPF FOR REMOVAL OF OTV AND OR COMPONENTS

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 0 }	{ 0 }
Other	{ 0 }	
Sub Total	(0)	Total (0)
		Total Manhours (0.0)

Serial Time To Complete: 120 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commercial Power:	Y	Instrumentation Power [Uninterrupted]:	NA	
Cleanliness:	100K	E.C.S. Humidity:	Temperature:	
		50 +/- 5 %	70 +/- 5 F	
Closed Circuit Television:	NA	Power Cutoff:	NA Facility GN2: NA	
Fuel/Oxidizer Disposal:	Y	Helium Supply:	NA Shop Air: NA	
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	NA Vacuum: NA	
Lightning Protection:	Y	Potable Water:	NA Paging: NA	
Commercial Telephone:	NA	RF System(*):	N OIS: NA	
Personnel Airlock:	NA	Grounding:	NA Explosion Proof: NA	

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	NA	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 31 REMOVE OTV FROM ORBITER

Subtask No: < 31.0200> Description: <REMOVE OTV >
 Hazard Level(*): 2 Local Clear
 Activity: LOWER STRONGBACK INTO POSITION-REMOVE HOLDDOWN HARDWARE-ATTACH OTV
 TO STRONGBACK-LIFT OTV FROM THE ORBITER PAYLOAD BAY
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 0 }
Shop	{ 4 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(8)	Total (8)
		Total Manhours (24.0)

Serial Time To Complete: 180 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): C
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 31 REMOVE OTV FROM ORBITER

Subtask No: < 31.0300> Description: <INSTALL OTV IN TRANSPORTER >
 Hazard Level(*): 2 Local Clear
 Activity: PLACE OTV INTO CANISTER AND SECURE FOR TRANSPORT

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 5 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(8)	Total { 8 }

Serial Time To Complete: 120 min

Total Manhours (16.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: NA

Cleanliness: 100K E.C.S.: Humidity: 50 +/- 5 % Temperature: 70 +/- 5 F

Closed Circuit Television: NA Power Cutoff: NA Facility GN2: NA

Fuel/Oxidizer Disposal: Y Helium Supply: NA Shop Air: NA

Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA

Lightning Protection: Y Potable Water: NA Paging: Y

Commerical Telephone: Y RF System(*): N OIS: NA

Personnel Airlock: Y Grounding: Y Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: Y	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level= 1: None	Others= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 34 MOVE TO PROCESSING FACILITY

Subtask No: < 34.0100>

Description: <MOVE OTV TO OTVPF

>

Hazard Level(*): 1 None

Activity: TRANSPORT THE OTV TO THE OTV PROCESSING FACILITY

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 3 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(5)	Total { 5 }

Serial Time To Complete: 120 min

Total Manhours (10.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: Y	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 34 MOVE TO PROCESSING FACILITY

Subtask No: < 34.0200> Description: <REMOVE OTV FROM TRANSPORTER >
 Hazard Level(*): 2 Local Clear
 Activity: ATTACH O/H CRANE AND SLINGS. REMOVE HOLDDOWN HARDWARE. REMOVE OTV FROM THE TRANSPORTER
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(5)	(0)
Inspector	(2)	(0)
Other	(0)	
Sub Total	(8)	Total (8)
		Total Manhours (40.0)

Serial Time To Complete: 300 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:
Air Lock: 40 40 50	[W/D/H][ft]	10 Ton 45 Ft.Hook Height
Doors: 0 0 0	[W/H][ft]	
High Bay: 0 0 0	[W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: NA	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: Y	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 34 MOVE TO PROCESSING FACILITY

Subtask No: < 34.0300> Description: <INSTALL OTV IN WORKSTAND >
 Hazard Level(*): 2 Local Clear
 Activity: INSTALL/SECURE OTV IN THE OTV WORKSTAND

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(5)	(0)
Inspector	(2)	(0)
Other	(0)	
Sub Total	(8)	Total (8)

Serial Time To Complete: 240 min

Total Manhours (32.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	35 45	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	20 Ton	70 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: Y	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: Y	Vacuum: NA
Lightning Protection: Y	Potable Water: Y	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: Y	OTV Adapter: Y
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
 or B: deluge
 or C: both
 or N: none

RF System= A: S Band & C Band
 or B: Ku Band
 or C: both
 or N: none

Hazard Level:= 1: None
 or 2: Local Clear
 or 3: Area Clear
 or 4: Facility Clear

Others:= Y: Yes
 N: No
 NA: Not Applicable
 TD: To Be Determined

Detailed Resources Identification

Task No: 34 MOVE TO PROCESSING FACILITY

Subtask No: < 34.0400> Description: <REMOVE BATTERIES AND ORDNANCE >
 Hazard Level(*): 2 Local Clear
 Activity: REMOVE BATTERY ACCESS PANELS AND REMOVE BATTERIES. REMOVE ALL UNUSED ORDNANCE
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(4)	(0)
Inspector	(1)	(0)
Other	(0)	
Sub Total	(6)	Total (6)

Serial Time To Complete: 180 min

Total Manhours (18.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors:	0	0	0	W/H][ft]	
High Bay:	70	100	85	W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: Y	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: Y
Lightning Protection: Y	Potable Water: Y
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 34 MOVE TO PROCESSING FACILITY

Subtask No: < 34.0500> Description: <PURGE AND LEAK CHECK OTV CRYO >
Hazard Level(*): 3 Area Clear
Activity: CONNECT OTV CRYO LOAD PURGE CART, PURGE OTV CRYO SYSTEM AND PERFORM LEAK CHECKS
Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 2 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(4)	Total (0)
		(4)

Serial Time To Complete: 180 min

Total Manhours (12.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity:	Temperature:
	50 +/- 5 %	70 +/- 5 F
Closed Circuit Television: Y	Power Cutoff: NA	Facility GN2: Y
Fuel/Oxidizer Disposal: Y	Helium Supply: Y	Shop Air: Y
Fire Protection/Deluge(*): B	Shower/Eye Wash: Y	Vacuum: NA
Lightning Protection: Y	Potable Water: Y	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: Y

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 34 MOVE TO PROCESSING FACILITY

Subtask No: < 34.0600> Description: <INSTALL OTV GPU/GSE
Hazard Level(*): 1 None
Activity: CONNECT GROUND POWER UNIT AND INSTRUMENTATION GSE TO OTV

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 0 }
Shop	{ 2 }	{ 0 }
Inspector	{ 1 }	{ 0 }
Other	{ 0 }	
Sub Total	(4)	Total (4)

Serial Time To Complete: 120 min

Total Manhours (8.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commercial Power:	Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness:	100K	E.C.S: Humidity:	Temperature:
		50 +/- 5 %	70 +/- 5 F
Closed Circuit Television:	NA	Power Cutoff:	NA
Fuel/Oxidizer Disposal:	N	Helium Supply:	NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	NA
Lightning Protection:	Y	Potable Water:	NA
Commercial Telephone:	Y	RF System(*):	N
Personnel Airlock:	Y	Grounding:	Y
		Explosion Proof:	NA

Detailed Equipment Resources

Special Tool Kit:	Y	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	Y	Adapter Cables:	Y	Ground Power Unit:	Y
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 35 CONDUCT PLANNED MAINTENANCE

Subtask No: < 35.0100> Description: <REFURBISH AEROBRAKE SYSTEM >
Hazard Level(*): 2 Local Clear
Activity: PERFORM MAINTENANCE AND REFURBISHMENT OF THE AEROBRAKE SYSTEM

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(2)	(0)
Shop	(6)	(0)
Inspector	(2)	(0)
Other	(0)	
Sub Total	(10)	(0)
		Total (10)

Serial Time To Complete: 600 min

Total Manhours (100.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

:
:
:

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	0 Ton	0 Ft. Hook Height
Doors:	0	0			
High Bay:	70	100	85	20 Ton	70 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): N	OIS: NA
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 35 CONDUCT PLANNED MAINTENANCE

Subtask No: < 35.0200> Description: <REMOVE ENGINE PUMPS FOR REFURB>
Hazard Level(*): 2 Local Clear
Activity: REMOVE THE ENGINE/PUMPS USING THE SPECIAL TOOL KIT AND ROUTE TO SHOP
FOR REPAIR AND REFURBISHMENT
Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 2 }	{ 0 }
Shop { 0 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (10)	Total (10)

Serial Time To Complete: 360 min Total Manhours (60.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:	
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors: 0 0 [W/H][ft]		
High Bay: 70 100 85 [W/D/H][ft]	20 Ton	70 Ft. Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: NA

Cleanliness: 100K E.C.S: Humidity: Temperature: 50 +/- 5 % 70 +/- 5 F

Closed Circuit Television: NA Power Cutoff: NA Facility GN2: NA

Fuel/Oxidizer Disposal: N Helium Supply: NA Shop Air: NA

Fire Protection/Deluge(*): A Shower/Eye Wash: NA Vacuum: NA

Lightning Protection: Y Potable Water: NA Paging: Y

Commerical Telephone: Y RF System(*): N OIS: NA

Personnel Airlock: Y Grounding: Y Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

<p>Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none</p> <p>Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear</p>	<p>RF System= A: S Band & C Band or B: Ku Band or C: both or N: none</p> <p>Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined</p>
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Detailed Resources Identification

Task No: 35 CONDUCT PLANNED MAINTENANCE

Subtask No: < 35.0300> Description: <REINSTALL ENGINE/PUMPS>
 Hazard Level(*): 2 Local Clear
 Activity: REINSTALL AND RETEST ENGINE/PUMPS

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total	(10)	(0)
		Total (10)

Serial Time To Complete: 360 min

Total Manhours (60.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	70	100	85 [W/D/H][ft]	20 Ton	70 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 35 CONDUCT PLANNED MAINTENANCE

Subtask No: < 35.0400> Description: <REINSTALL AEROBRAKE ASSEMBLY >
Hazard Level(*): 2 Local Clear
Activity: REINSTALL AREOBRAKE ASSEMBLY USING SPECIAL TOOL KIT

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 2 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 2 }	{ 0 }
Other	{ 0 }	
Sub Total (10)		Total (10)

Serial Time To Complete: 240 min

Total Manhours (40.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:		
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0	0		[W/H][ft]		
High Bay:	70	100	85	[W/D/H][ft]	20 Ton	70 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: Y
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 36 CONDUCT UNPLANNED MAINTENANCE

Subtask No: < 36.0100>
Hazard Level(*): 1 None
Activity: AS REQUIRED

Description: <CONDUCT UNPLANNED MAINTENANCE >

Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 0 }	{ 0 }
Shop	{ 0 }	{ 0 }
Inspector	{ 0 }	{ 0 }
Other	{ 0 }	
Sub Total	(0)	(0)
		Total (0.0)

Serial Time To Complete: 0 min

Total Manhours (0.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0	0	[W/H][ft]		
High Bay:	70	100	85 [W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y Instrumentation Power [Uninterrupted]: NA

Cleanliness: 100K

E.C.S: Humidity:
50 +/- 5 %

Temperature:
70 +/- 5 F

Closed Circuit Television: NA

Power Cutoff: NA

Facility GN2: NA

Fuel/Oxidizer Disposal: N

Helium Supply: N

Shop Air: N

Fire Protection/Deluge(*): A

Shower/Eye Wash: NA

Vacuum: NA

Lightning Protection: Y

Potable Water: NA

Paging: Y

Commerical Telephone: Y

RF System(*): N

OIS: NA

Personnel Airlock: Y

Grounding: Y

Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA

Slings: NA

OTV Adapter: NA

Breakout Boxes: NA

Adapter Cables: NA

Ground Power Unit: NA

Air Pallet: NA

Work Stands: Y

Special Hoisting Equip: NA

NASA Canister: NA

OTV Canister: NA

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection
or B: deluge
or C: both
or N: none

RF System= A: S Band & C Band
or B: Ku Band
or C: both
or N: none

Hazard Level:= 1: None
or 2: Local Clear
or 3: Area Clear
or 4: Facility Clear

Others:= Y: Yes
N: No
NA: Not Applicable
TD: To Be Determined

Detailed Resources Identification

Task No: 37 INSTALL MODIFICATIONS

Subtask No: < 37.0100>
Hazard Level(*): 1 None
Activity: AS REQUIRED

Description: <INSTALL MODIFICATIONS

>

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(0)	(0)
Shop	(0)	(0)
Inspector	(0)	(0)
Other	(0)	
Sub Total	(0)	Total (0.0)

Serial Time To Complete: 0 min

Total Manhours (0.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:
Air Lock: 0 0 0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors: 0 0	[W/H][ft]	
High Bay: 70 100 85	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: N
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: N
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: Y	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 38 RETEST VERIFICATION

Subtask No: < 38.0100> Description: <APPLY POWER TO OTV>
 Hazard Level(*): 1 None
 Activity: APPLY POWER TO OTV USING TEST SET OR OTVCS-VERIFY POWER PROFILE TO INSURE MOD PACKAGE POWER REQUIREMENTS
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	{ 0 }	{ 0 }
Engineering	{ 1 }	{ 2 }
Shop	{ 2 }	{ 2 }
Inspector	{ 1 }	{ 2 }
Other	{ 0 }	
Sub Total	(4)	(6)
		Total (10)
		Total Manhours (10.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:				Crane Capacity:	
Air Lock:	0	0	0	[W/D/H][ft]	0 Ton 0 Ft. Hook Height
Doors:	0	0		[W/H][ft]	
High Bay:	70	100	85	[W/D/H][ft]	0 Ton 0 Ft. Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y	
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F
Closed Circuit Television: NA	Power Cutoff: Y	Facility GN2: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA	Vacuum: NA
Lightning Protection: Y	Potable Water: NA	Paging: Y
Commerical Telephone: Y	RF System(*): A	OIS: Y
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

Detailed Resources Identification

Task No: 38 RETEST VERIFICATION

Subtask No: < 38.0200> Description: <PERFORM OTV HEALTH CHECKS >
Hazard Level(*): 1 None
Activity: PERFORM OTV RETEST/REVERIFICATION TO VERIFY HEALTH AND STATUS OF OTV

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(2)
Shop (2)	(2)
Inspector (1)	(2)
Other (0)	
Sub Total (4)	Total (6)
	Total Manhours (10.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: Y
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: Y
Fuel/Oxidizer Disposal: N	Temperature: 70 +/- 5 F
Fire Protection/Deluge(*): A	Facility GN2: NA
Lightning Protection: Y	Shop Air: NA
Commerical Telephone: Y	Shower/Eye Wash: NA
Personnel Airlock: Y	Vacuum: NA
	Potable Water: NA
	Paging: Y
	RF System(*): A
	OIS: Y
	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: Y	Adapter Cables: Y	Ground Power Unit: Y
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 38 RETEST VERIFICATION

Subtask No: < 38.0300> Description: <REMOVE POWER FROM OTV >
 Hazard Level(*): 2 Local Clear
 Activity: USING THE TEST SET OR THE OTVCS, REMOVE OTV POWER. REMOVE POWER FROM THE OTV GPU.
 Personnel:

Vehicle		Control Station	
Payload Specialist(s)	{ 0 }		{ 0 }
Engineering	{ 1 }		{ 2 }
Shop	{ 2 }		{ 2 }
Inspector	{ 1 }		{ 2 }
Other	{ 0 }		
Sub Total		(4)	(6)
			Total (10)

Serial Time To Complete: 60 min

Total Manhours (10.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

: : :
 : : :
 : : :

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0	[W/H][ft]		
High Bay:	70 100 85	[W/D/H][ft]	0 Ton	0 Ft.Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]:	Y	
Cleanliness:	100K	E.C.S: Humidity:	Temperature:	
		50 +/- 5 %	70 +/- 5 F	
Closed Circuit Television:	NA	Power Cutoff:	Y	Facility GN2: NA
Fuel/Oxidizer Disposal:	N	Helium Supply:	NA	Shop Air: NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	NA	Vacuum: NA
Lightning Protection:	Y	Potable Water:	NA	Paging: Y
Commerical Telephone:	Y	RF System(*):	A	OIS: Y
Personnel Airlock:	Y	Grounding:	Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	Y	Adapter Cables:	Y	Ground Power Unit:	Y
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 39 OTV STORAGE AND RETURN TO FLOW

Subtask No: < 39.0100>

Description: <COVER OTV>

Hazard Level(*): 1 None

Activity: PLACE PROTECTIVE COVERS ON OTV

Personnel:

Vehicle	Control Station
Payload Specialist(a) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 4 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (7)	Total (0)
	Total Manhours (7.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:			Crane Capacity:	
Air Lock:	0 0 0	{ W/D/H } [ft]	0 Ton	0 Ft. Hook Height
Doors:	0 0	{ W/H } [ft]		
High Bay:	70 100 85	{ W/D/H } [ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power:	Y	Instrumentation Power [Uninterrupted]: NA		
Cleanliness:	100K	E.C.S: Humidity:	Temperature:	
		50 +/- 5 %	70 +/- 5 F	
Closed Circuit Television:	NA	Power Cutoff:	NA	Facility GN2: NA
Fuel/Oxidizer Disposal:	N	Helium Supply:	NA	Shop Air: NA
Fire Protection/Deluge(*):	A	Shower/Eye Wash:	NA	Vacuum: NA
Lightning Protection:	Y	Potable Water:	NA	Paging: Y
Commerical Telephone:	Y	RF System(*):	N	OIS: NA
Personnel Airlock:	Y	Grounding:	Y	Explosion Proof: NA

Detailed Equipment Resources

Special Tool Kit:	NA	Slings:	NA	OTV Adapter:	NA
Breakout Boxes:	NA	Adapter Cables:	NA	Ground Power Unit:	NA
Air Pallet:	NA	Work Stands:	Y	Special Hoisting Equip:	NA
NASA Canister:	NA	OTV Canister:	NA		

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 39 OTV STORAGE AND RETURN TO FLOW

Subtask No: < 39.0200>

Description: <SEAL OTV

>

Hazard Level(*): 1 None

Activity: INSTALL SEALS OTV AND MONITOR FOR PROPER TEMP AND HUMIDITY.

Personnel:

Vehicle	Control Station
Payload Specialist(s) { 0 }	{ 0 }
Engineering { 1 }	{ 0 }
Shop { 0 }	{ 0 }
Inspector { 2 }	{ 0 }
Other { 0 }	
Sub Total (9)	Total (9)
	Total Manhours (9.0)

Serial Time To Complete: 60 min

Automation Need: (Primary Key)

Automation Secondary Key(s):

Detailed Facility Resources

Physical Size:	Crane Capacity:
Air Lock: 0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors: 0 0 0 [W/H][ft]	
High Bay: 70 100 85 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 39 OTV STORAGE AND RETURN TO FLOW

Subtask No: < 39.0300> Description: <REMOVE SEAL
Hazard Level(+): 1 None
Activity: REMOVE SEALS INSTALLED ON OTV

Personnel:

Vehicle	Control Station
Payload Specialist(s) (0)	(0)
Engineering (1)	(0)
Shop (4)	(0)
Inspector (1)	(0)
Other (0)	
Sub Total (6)	Total (6)

Serial Time To Complete: 60 min

Total Manhours (6.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock: 0 0 0	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Doors: 0 0	[W/H][ft]		
High Bay: 70 100 85	[W/D/H][ft]	0 Ton	0 Ft. Hook Height
Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA		
Cleanliness: 100K	E.C.S. Humidity: 50 +/- 5 %	Temperature: 70 +/- 5 F	
Closed Circuit Television: NA	Power Cutoff: NA	Facility GN2: NA	
Fuel/Oxidizer Disposal: N	Helium Supply: NA	Shop Air: NA	
Fire Protection/Deluge(+): A	Shower/Eye Wash: NA	Vacuum: NA	
Lightning Protection: Y	Potable Water: NA	Paging: Y	
Commerical Telephone: Y	RF System(+): N	OIS: NA	
Personnel Airlock: Y	Grounding: Y	Explosion Proof: NA	

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(+) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 39 OTV STORAGE AND RETURN TO FLOW

Subtask No: < 39.0400>

Description: <REMOVE COVERS ON OTV

>

Hazard Level(*): 1 None

Activity: REMOVE COVERS ON OTV

Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(4)	(0)
Inspector	(1)	(0)
Other	(0)	
Sub Total	(6)	(0)
		Total (6)
Serial Time To Complete:	60 min	Total Manhours (6.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

:
:
:

Detailed Facility Resources

Physical Size:		Crane Capacity:
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton 0 Ft.Hook Height
Doors:	0 0 0 [W/H][ft]	
High Bay:	70 100 85 [W/D/H][ft]	0 Ton 0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA
	Temperature: 70 +/- 5 F
	Facility GN2: NA
	Shop Air: NA
	Vacuum: NA
	Paging: Y
	OIS: NA

Detailed Equipment Resources

Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

Fire Protection/Deluge= A: fire protection	RF System= A: S Band & C Band
or B: deluge	or B: Ku Band
or C: both	or C: both
or N: none	or N: none
Hazard Level:= 1: None	Others:= Y: Yes
or 2: Local Clear	N: No
or 3: Area Clear	NA: Not Applicable
or 4: Facility Clear	TD: To Be Determined

Detailed Resources Identification

Task No: 39 OTV STORAGE AND RETURN TO FLOW

Subtask No: < 39.0500> Description: <RETURN OTV TO FLOW>
 Hazard Level(*): 2 Local Clear
 Activity: PREPARE FOR INTEGRATED TEST. VERIFY ALL AVIONICS CONFIGURED FOR POWER APPLICATION
 Personnel:

Vehicle		Control Station
Payload Specialist(s)	(0)	(0)
Engineering	(1)	(0)
Shop	(2)	(0)
Inspector	(1)	(0)
Other	(0)	
Sub Total	(4)	(0)
		Total (4)

Serial Time To Complete: 180 min

Total Manhours (12.0)

Automation Need: (Primary Key)

Automation Secondary Key(s)

Detailed Facility Resources

Physical Size:		Crane Capacity:	
Air Lock:	0 0 0 [W/D/H][ft]	0 Ton	0 Ft.Hook Height
Doors:	0 0 0 [W/H][ft]		
High Bay:	70 100 85 [W/D/H][ft]	0 Ton	0 Ft.Hook Height

Standard Commerical Power: Y	Instrumentation Power [Uninterrupted]: NA
Cleanliness: 100K	E.C.S: Humidity: 50 +/- 5 %
Closed Circuit Television: NA	Power Cutoff: NA
Fuel/Oxidizer Disposal: N	Helium Supply: NA
Fire Protection/Deluge(*): A	Shower/Eye Wash: NA
Lightning Protection: Y	Potable Water: NA
Commerical Telephone: Y	RF System(*): N
Personnel Airlock: Y	Grounding: Y
	Explosion Proof: NA

Detailed Equipment Resources

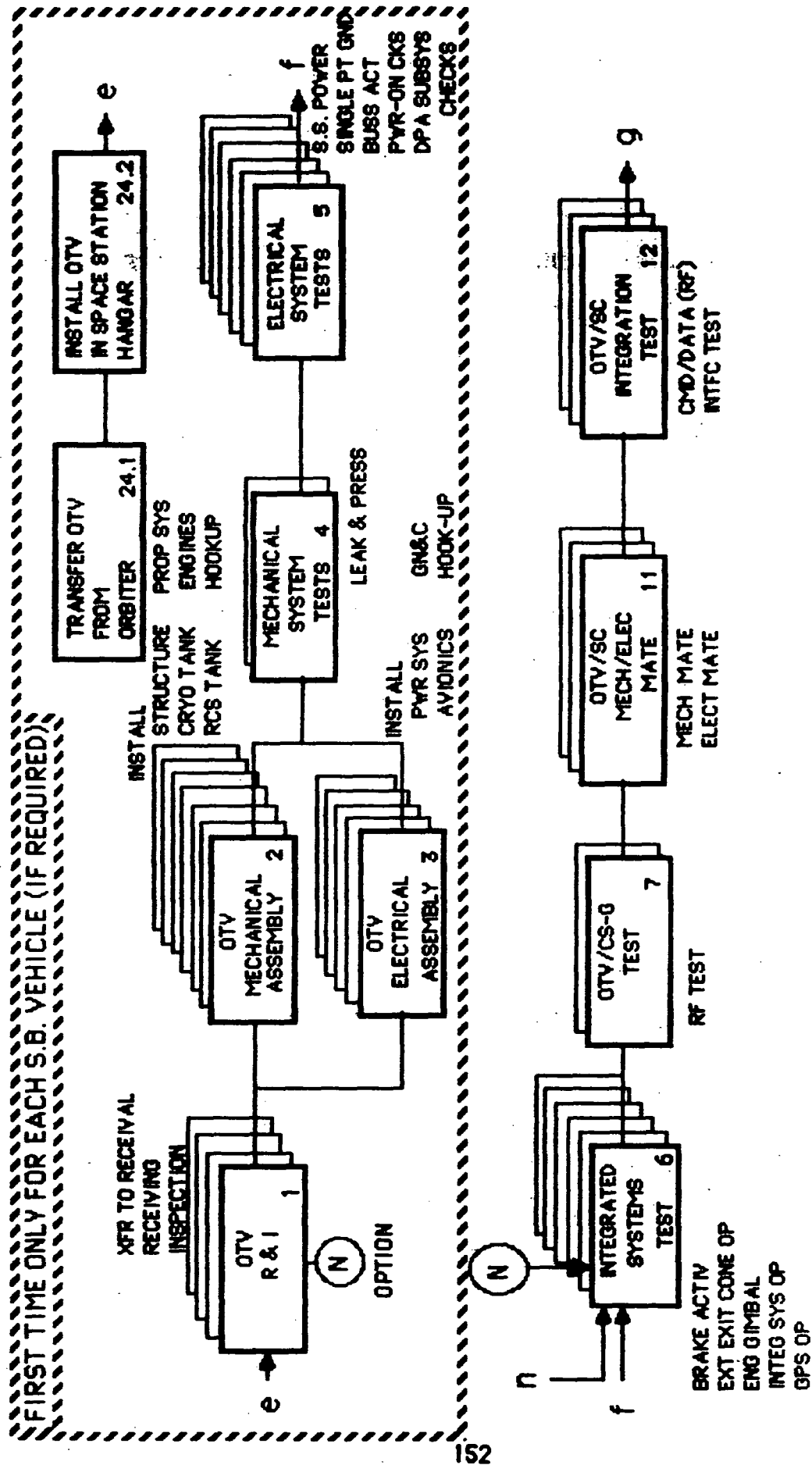
Special Tool Kit: NA	Slings: NA	OTV Adapter: NA
Breakout Boxes: NA	Adapter Cables: NA	Ground Power Unit: NA
Air Pallet: NA	Work Stands: Y	Special Hoisting Equip: NA
NASA Canister: NA	OTV Canister: NA	

(*) Legend For Data Input

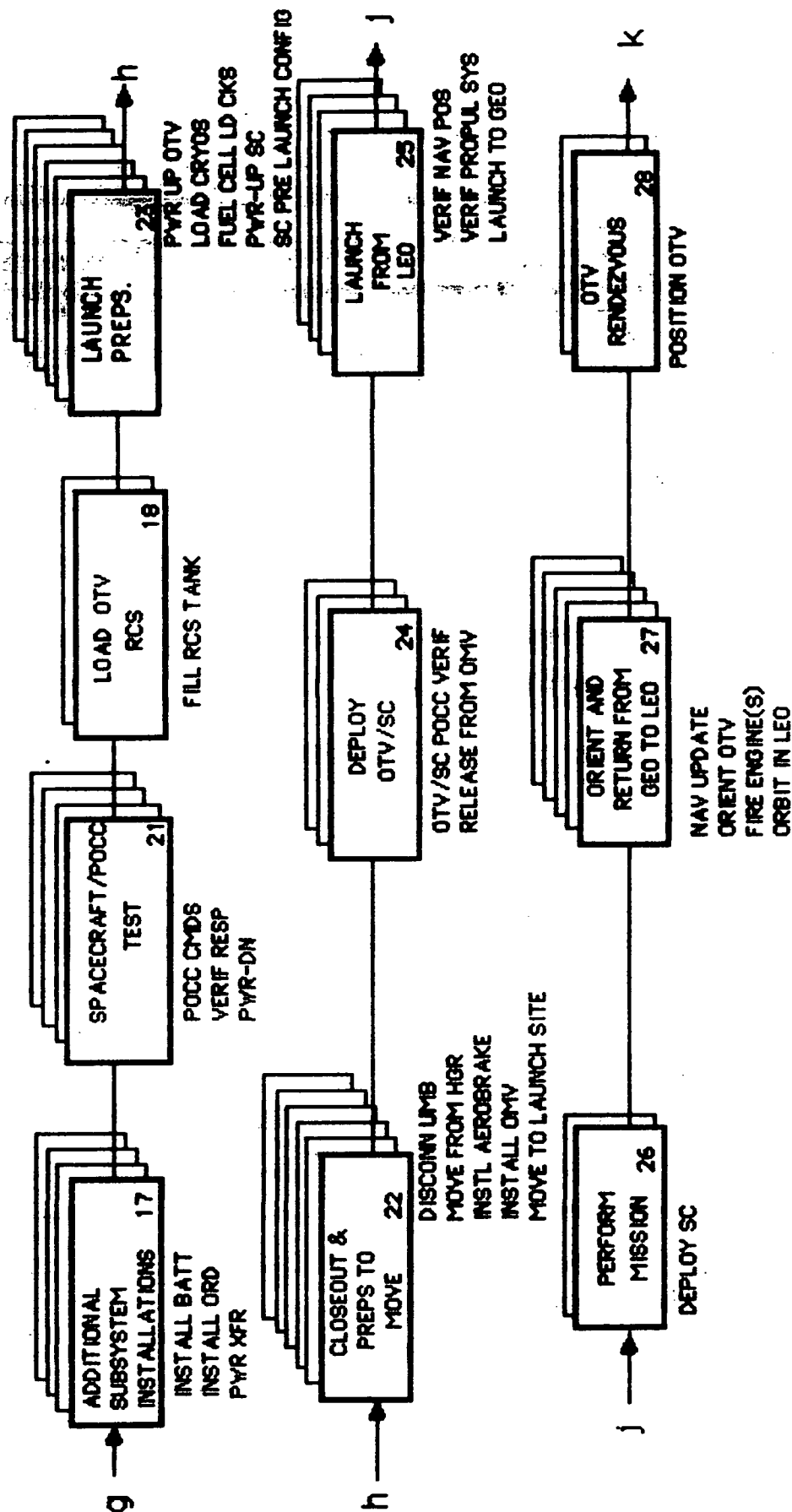
Fire Protection/Deluge= A: fire protection or B: deluge or C: both or N: none	RF System= A: S Band & C Band or B: Ku Band or C: both or N: none
Hazard Level:= 1: None or 2: Local Clear or 3: Area Clear or 4: Facility Clear	Others:= Y: Yes N: No NA: Not Applicable TD: To Be Determined

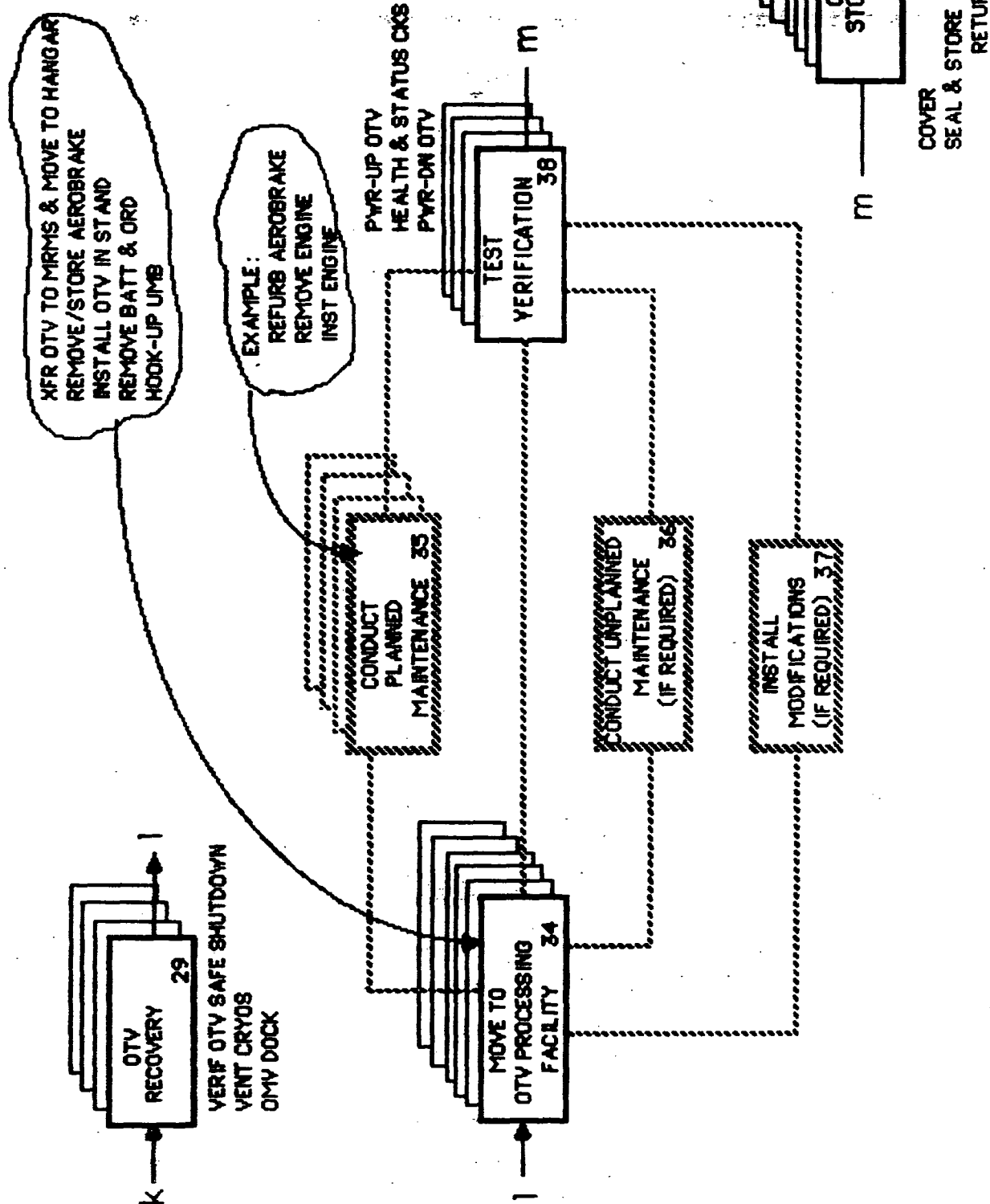
APPENDIX C

SPACE BASED
ORBITAL TRANSFER VEHICLE FLOW



FUNCTIONAL FLOW BLOCK IDENTIFICATION NUMBERS ARE CONSISTENT WITH THE FLOW FOR THE GROUND BASED PAYLOAD BAY CRYO CONFIGURATION. TASKS WITH DECIMAL NUMBERS ARE NEW FUNCTIONS ON THIS FLOW -- MISSING NUMBERS ARE G.B. OTV FUNCTIONS NOT REQUIRED FOR THE S.B. FLOW.





APPENDIX D

SPACE BASED
RESOURCE IDENTIFICATION SHEETS

SPACE BASE DETAILED RESOURCE IDENTIFICATION SHEET DESCRIPTION

The following Space Based Resource Identification Sheets (RIS's) represent the tasks/subtasks associated with processing the OTV in the Space Station environment. The Space Based tasks are numbered 1 thru 39 as are the Ground Based RIS's, however only those tasks required for Space Based vehicle processing are included. The task/ subtask numbers are identical for both Ground Based and Space Based activities that are the same to facilitate direct comparisons of requirements for the similar tasks. Any variance in the subtask numbering indicates a variance in the Space Based processing requirements.

The RIS for each subtask is divided into 4 sections; Personnel, Control System-Station, OTV Hanger, and Propellant Servicing Facility and Equipment.

The Personnel section details manpower requirements at either the Space Station (IVA or EVA) or the Ground Control Station. Along with the manning requirements is the serial time to complete the subtask and the computed total manhours. An entry is also made as to whether SC-POCC support is required. The Primary and Secondary keys associated with the Automation Technology Knowledge Base (ATKB) have not been keyed at this time.

The Control System-Station (CS-S) section details the support requirements of the specific subtask on the CS-S control system aboard the Space Station. The requirements include all the remote control capabilities required for the operations in the OTV hanger.

The OTV Hanger section details the facility requirements of the OTV hanger utilized for assembly and checkout of the Space Based OTV.

The Propellant Servicing Facility details the facility equipment required for propellant and fuel cell servicing of the OTV at the Space Station. Included in this section is the miscellaneous support equipment utilized for OTV processing.

It should also be noted that the Space Based RIS's are presented in Space Based OTV processing order which may or may not be in numerical sequence.

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 1 RECEIVING AND INSPECTION

SUBTASK NO: < 1.0400> DESCRIPTION: <TRANSFER TO RECEIVING >
ACTIVITY: REMOVE OTV AND COMPONENTS FROM ORBITER AND TRANSPORT TO ASSEMBLY PORT

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (1)	CS-G (0)
	STATION SPECIALIST(S) EVA (2)	
	Sub Total	(3)
		Total (3)
Serial Time To Complete: 240 min		Total Manhours (12.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: Y ,Video: Y ,Telemetry: Y

OTV HANGER REMOTE CONTROL:

Door(s): Y ,Lights: Y

FSS latch/unlatch: N

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: Y

Paging: N MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: Y

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: Y

ORU storage lockers: Y

Tool lockers: Y

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: Y

EVA equipment box: Y

Support Equipment: Y

Portable MPAC: Y

Lights: Y

Bar code reader: Y

Video Cameras: Y

Tools manual/power: Y

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 1 RECEIVING AND INSPECTION

SUBTASK NO: < 1.0550> DESCRIPTION: <RECEIVING>
ACTIVITY: MANIFEST VERIFICATION, COMPONENT STORAGE AND LOCATION IDENTIFICATION

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (3)	CS-G (0)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (3)	Total (3)
Serial Time To Complete: 300 min		Total Manhours (15.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N Video: N Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): Y Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: N RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: Y

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: Y

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: Y

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: Y

Lights: Y

Bar code reader: Y

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 2 OTV MECHANICAL ASSEMBLY

SUBTASK NO: < 2.0100> DESCRIPTION: <INSTALL ASSEMBLY STRUCTURE >

ACTIVITY: USING THE MRMS AND THE HPA, MOVE THE OTV ASSEMBLY INTO THE WORKSTAND
INSPECT GUIDEPINS AND WORKSTAND ATTACH POINTS

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (0)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	Total
	(2)	(0)
		(2)

Serial Time To Complete: 960 min Total Manhours (32.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): Y ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: Y

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 2 OTV MECHANICAL ASSEMBLY

SUBTASK NO: < 2.0200> DESCRIPTION: <INSTALL CRYO TANK SET >

ACTIVITY: MOVE TANK SET IN TO POSITION, INSPECT DISCONNECT GUIDE PINS AND STRUCTURE ATTACH POINTS, SECURE, SAFE AND VERIFY.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (0)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	(2)
		Total { 0 }
		2 }
Serial Time To Complete:	300 min	Total Manhours (10.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): N

***** OTV HANGER *****

Aerobroke storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: Y

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: Y

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
 TASK NO: 2 OTV MECHANICAL ASSEMBLY

SUBTASK NO: < 2.0300> DESCRIPTION: <INSTALL RCS TANK SET >

ACTIVITY: IMPLEMENT SAFTY PROCEDURE-REMOVE TANK SET FROM STORAGE SITE, INSPECT,
 REMOVE PORTECTIVE COVER/DEVICES, INSTALL IN ASSEMBLY STRUCTURE, SECURE AND SAFE

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (0)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	(2)
		Total { 0 }
		2 }
Serial Time To Complete:	360 min	Total Manhours (12.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
 FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Postioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: Y

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: Y

Portable MPAC: N

Lights: Y

Bar code reader: Y

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 2 OTV MECHANICAL ASSEMBLY

SUBTASK NO: < 2.0400> DESCRIPTION: <INSTL PROPL SYS PLMB & CONTROL>
ACTIVITY: USING MRMS AND HPA, MOVE AND ALIGN COMPONENTS INTO PLACE AND INSTALL PER PROCEDURES.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (0)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total	Total
	(2)	(0)
		(2)
Serial Time To Complete: 480 min		Total Manhours (16.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:
Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:
Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM: MRMS teleoperation control: Y
On-board: N ,Up-link: N

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N Prop. load & drain computer system: N

ORU Bar code data base: N Paging: Y MPAC: N

Planning work station (computer): Y
***** OTV HANGER *****

Aerobrake storage fitting: N OTV flight support structure: Y

Personnel EVA door: N MPAC connection: N

HPA's (local & teleoperated): Y Hand & foot restraints: N

ORU storage lockers: Y Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N
Remote Control Removable Quick Disconnects,
Fill/drain/vent/pressurization: N
Fuel cell fill/drain/purge/pressurization: N
Propellant metering system: N

EVA Personnel equipment: N EVA equipment box: N Support Equipment: Y

Portable MPAC: N Lights: Y Bar code reader: N

Video Cameras: Y Tools manual/power: N

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 2 OTV MECHANICAL ASSEMBLY

SUBTASK NO: < 2.0500> DESCRIPTION: <INSTALL RCS/ENGINES >

ACTIVITY: INSTALL RCS NOZZLES AND ENGINES

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (0)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (0)
		Total Manhours (16.0)

Serial Time To Complete: 480 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: Y

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: Y

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 3 ELECTRICAL ASSEMBLY

SUBTASK NO: < 3.0200> DESCRIPTION: <INSTALL POWER SYSTEM >

ACTIVITY: ATTACH ELECTRICAL POWER SYSTEM TO THE MRMS OR HPA. ALIGN GUIDE PINS AND ATTACH POINTS. INSTALL, SECURE, AND SAFE.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		Total-----
		{ 0 }
		{ 2 }
Serial Time To Complete: 480 min		Total Manhours (16.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: Y

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: Y

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: Y

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 3 ELECTRICAL ASSEMBLY

SUBTASK NO: < 3.0300> DESCRIPTION: <INSTALL GN&C SYSTEM >

ACTIVITY: ATTACH MRMS OR HPA TO GN&C. MOVE GN&C INTO POSITION, INSPECT GUIDE PINS AND INTERFACE, LIFT INTO POSITION INSTALL, SECURE AND SAFE.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (0)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (0)
		Total Manhours (8.0)

Serial Time To Complete: 240 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: Y

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: Y

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 3 ELECTRICAL ASSEMBLY

SUBTASK NO: < 3.0400> DESCRIPTION: <INSTALL AVIONICS SYSTEM >

ACTIVITY: ATTACH MRMS OR HPA TO THE AVIONICS SYSTEM, INSPECT GUIDE PINS ATTACH POINTS AND INTERFACE, LIFT TO POSITION, INSTALL, SECURE AND SAFE.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (2)
Serial Time To Complete: 240 min		Total Manhours (8.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEOD SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: Y

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: Y

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 4 MECHANICAL SYSTEM TEST

SUBTASK NO: < 4.0100> DESCRIPTION: <LEAK AND PRESSURE CHECKS >

ACTIVITY: VERIFY PLUMBING CONNECTIONS, CONFIGURE N2 SYSTEM, PRESSURIZE TANK
SET PLUMBING, PROPULSION SYSTEM PLUMBING.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (0)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total	(2)----- (0)
		Total----- (2)
Serial Time To Complete: 1380 min		Total Manhours (46.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: Y

TV(signature data auto scan): N

RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 5 ELECTRICAL SYSTEM TEST

SUBTASK NO: < 5.0150> DESCRIPTION: <SPACE STATION POWER ACTIVATION>
ACTIVITY: POWER ON SPACE STATION POWER UNIT PER PROCEDURE. VERIFY POWER PROFILE

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (0)
		Total Manhours (8.0)

Serial Time To Complete: 240 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 5 ELECTRICAL SYSTEM TEST

SUBTASK NO: < 5.0200> DESCRIPTION: <SINGLE POINT GROUND CHECKS >
ACTIVITY: PERFORM SINGLE POINT GROUND CHECKS

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (0)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (2)	Total (0)
		Total Manhours (6.0)

Serial Time To Complete: 180 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 5 ELECTRICAL SYSTEM TEST

SUBTASK NO: < 5.0300> DESCRIPTION: <ACTIVATE POWER/ESSENTIAL BUS >

ACTIVITY: POWER ON THE POWER BUS AND VERIFY POWER PROFILE. POWER ON THE ESSENTIAL BUS AND VERIFY POWER PROFILE.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		Total-----
		(2)
Serial Time To Complete:	60 min	Total Manhours (2.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 5 ELECTRICAL SYSTEM TEST

SUBTASK NO: < 5.0400> DESCRIPTION: <AVIONICS POWER ON CHECKS >

ACTIVITY: APPLY OTV AVIONICS BUS POWER AND VERIFY THE POWER PROFILE.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (0)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	(2)
		Total { 2 }
Serial Time To Complete: 180 min		Total Manhours (6.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 5 ELECTRICAL SYSTEM TEST

SUBTASK NO: < 5.0500> DESCRIPTION: <DPA SUBSYSTEM CHECKOUT >

ACTIVITY: VERIFY ALL AVIONICS ARE ON AND TELEMETRY MEASUREMENTS ARE PROPER AT THE SPACE STATION AND GROUND.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	Total
	(2)	(0)
		(2)
Serial Time To Complete: 30 min		Total Manhours (1.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:
Audio: N Video: N Telemetry: N

OTV HANGER REMOTE CONTROL:
Door(s): N Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM: MRMS teleoperation control: N
On-board: N Up-link: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N Prop. load & drain computer system: N

ORU Bar code data base: N Paging: Y MPAC: N

Planning work station (computer): Y
***** OTV HANGER *****

Aerobroke storage fitting: N OTV flight support structure: N

Personnel EVA door: N MPAC connection: N

HPA's (local & teleoperated): N Hand & foot restraints: N

ORU storage lockers: N Tool lockers: N

Thermal control system: N
***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N
Remote Control Remateable Quick Disconnects,
Fill/drain/vent/pressurization: N
Fuel cell fill/drain/purge/pressurization: N
Propellant metering system: N

EVA Personnel equipment: N EVA equipment box: N Support Equipment: N

Portable MPAC: N Lights: N Bar code reader: N

Video Cameras: N Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 6 INTEGRATED SYSTEM TEST

SUBTASK NO: < 6.0100> DESCRIPTION: <AEROBRAKE CONTROL CHECKS >
ACTIVITY: PERFORM AEROBRAKE CHECKS TO VERIFY PROPER OPERATION OF ALL COMPONENTS

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		Total-----
		(8)
Serial Time To Complete: 240 min		Total Manhours (32.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 6 INTEGRATED SYSTEM TEST

SUBTASK NO: < 6.0200> DESCRIPTION: <EXTENDABLE ENGINE CONE CHECKS >

ACTIVITY: EXTEND/RETRACT EEC-VERIFY ALL COMPONENTS ARE OPERATING PROPERLY

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	Total
	(2)	(6)
		(8)
Serial Time To Complete:	60 min	Total Manhours (8.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 6 INTEGRATED SYSTEM TEST

SUBTASK NO: < 6.0300> DESCRIPTION: <ENGINE GIMBLE CHECKS >

ACTIVITY: CONFIGURE GPS/OTV GSE AND TRANSMISSION SYSTEM, TRANSMIT COMMAND
(Ku-BAND CLR)

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total	(2)
		Total (8)
		Total Manhours (16.0)

Serial Time To Complete: 120 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 6 INTEGRATED SYSTEM TEST

SUBTASK NO: < 6.0400> DESCRIPTION: <INTEGRATED SYSTEM CHECKS >

ACTIVITY: CONFIGURE GPS/OTV GSE AND TRANSMISSION SYSTEM. TRANSMIT COMMAND (Ku-BAND CLR)

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	2)-----{ 6 }
		Total-----{ 8 }
Serial Time To Complete: 1440 min		Total Manhours (192.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobroke storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 6 INTEGRATED SYSTEM TEST

SUBTASK NO: < 6.0500> DESCRIPTION: <GPS OPERATION CHECKS>
ACTIVITY: CONFIGURE GPS/OTV/GSE AND TRANSMISSION SYSTEM

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (6)
		Total Manhours (16.0)

Serial Time To Complete: 120 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:
Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:
Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM: MRMS teleoperation control: N
On-board: N ,Up-link: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N Prop. load & drain computer system: N

ORU Bar code data base: N Paging: Y MPAC: N

Planning work station (computer): Y
***** OTV HANGER *****

Aerobrake storage fitting: N OTV flight support structure: N

Personnel EVA door: N MPAC connection: N

HPA's (local & teleoperated): N Hand & foot restraints: N

ORU storage lockers: N Tool lockers: N

Thermal control system: N
***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N
Remote Control Remateable Quick Disconnects,
Fill/drain/vent/pressurization: N
Fuel cell fill/drain/purge/pressurization: N
Propellant metering system: N

EVA Personnel equipment: N EVA equipment box: N Support Equipment: N

Portable MPAC: N Lights: N Bar code reader: N

Video Cameras: N Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 7 OTV/CS-G TEST

SUBTASK NO: < 7.0100> DESCRIPTION: <OTVCS RF TEST >

ACTIVITY: CONFIGURE OTV/GPS/GSE AND TRANSMISSION SYSTEM, TRANSMIT COMMANDS

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total-----	(2)-----
		Total-----
		(8)
Serial Time To Complete: 960 min		Total Manhours (128.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y
FSS latch/unlatch: Y

TV(signature data auto scan): Y
RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 11 OTV SPACECRAFT MATE

SUBTASK NO: < 11.0100> DESCRIPTION: <MECHANICALLY MATE OTV TO SC >

ACTIVITY: USING SPACECRAFT ADAPTER HARDWARE AND HANDLING EQUIPMENT
MECHANICALLY MATE OTV AND SPACECRAFT.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 1 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 2 }	
	Sub Total	(3)
		Total { 8 }
		(9)
Serial Time To Complete: 360 min		Total Manhours (54.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: Y ,Video: Y ,Telemetry: Y

OTV HANGER REMOTE CONTROL:

Door(s): Y ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: Y

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: Y

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects.

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: Y

EVA equipment box: Y

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 11 OTV SPACECRAFT MATE

SUBTASK NO: < 11.0200> DESCRIPTION: <ELECTRICALLY MATE OTV TO S/C >

ACTIVITY: VERIFY/CONNECT ALL S/C ELECTRICAL CABLES

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 1 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 2 }	
	Sub Total-----	(3)-----
		Total-----
		(9)
Serial Time To Complete: 240 min		Total Manhours (36.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: Y Video: Y Telemetry: Y

OTV HANGER REMOTE CONTROL:

Door(s): N Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobroke storage fitting: N

OTV flight support structure: N

Personnel EVA door: Y

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: Y

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: Y

EVA equipment box: Y

Support Equipment: Y

Portable MPAC: Y

Lights: Y

Bar code reader: Y

Video Cameras: Y

Tools manual/power: Y

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: Y

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 12 OTV SPACECRAFT INTEGRATION

SUBTASK NO: < 12.0500>

DESCRIPTION: <CMD/DATA RF CHECKS

>

ACTIVITY: VERIFY TELEMETRY AND COMMAND RF LINKS TO OTV AND S/C

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (2)	Total (6)
		8
Serial Time To Complete: 300 min		Total Manhours (40.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

TV(signature data auto scan): Y

FSS latch/unlatch: Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

MRMS teleoperation control: N

On-board: N ,Up-link: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 12 OTV SPACECRAFT INTEGRATION

SUBTASK NO: < 12.0600>

DESCRIPTION: <OTV S/C INTERFACE TEST

>

ACTIVITY: VERIFY MECHANICAL/ELECTRICAL INTERFACES BETWEEN OTV AND S/C

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (6)
		Total Manhours (16.0)

Serial Time To Complete: 120 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 17 INSTALL BATTERIES AND ORDNANCE

SUBTASK NO: < 17.0200>

DESCRIPTION: <INSTALL BATTERIES

>

ACTIVITY: REMOVE THE ACCESSS PANELS-INSTALL BATTERIES-PERFORM THE BATTERY TEST PROCEDURE-CLOSE THE ACCESS PANELS

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		Total-----
		{ 6 }
		{ 8 }
Serial Time To Complete: 180 min		Total Manhours (24.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobroke storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: Y

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: Y

Portable MPAC: N

Lights: Y

Bar code reader: Y

Video Cameras: Y

Tools manual/power: Y

External ORU storage boxes: Y

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 17 INSTALL BATTERIES AND ORDNANCE

SUBTASK NO: < 17.0300>

DESCRIPTION: <INSTALL ORDNANCE

>

ACTIVITY: REMOVE ACCESS PANELS—PERFORM STATIC VOLTAGE CHECKS—INSTALL ORDNANCE
PERFORM STATIC VOLTAGE CHECKS—ELECTRICALLY CONNECT SQUIBS—REPLACE ACCESS PANELS

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (6)
		Total Manhours (48.0)

Serial Time To Complete: 360 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N Video: N Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: Y

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 17 INSTALL BATTERIES AND ORDNANCE

SUBTASK NO: < 17.0500> DESCRIPTION: <PERFORM POWER TRANSFER CHECKS >

ACTIVITY: PERFORM OTV POWER ON TEST-TRANSFER POWER TO BATTERY POWER-PERFORM BATTERY POWER CHECKS-TRANSFER POWER TO SPACE STATION POWER.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (6)
		Total Manhours (16.0)

Serial Time To Complete: 120 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S):

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 18 LOAD OTV RCS

SUBTASK NO: < 18.0200> DESCRIPTION: <FILL RCS TANKS >
ACTIVITY: VERIFY RCS MECHANICAL CONNECTIONS, COMMAND START OF FILL OPERATIONS-
VERIFY PRESSURE/TEMP DATA.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (2)	Total (8)
Serial Time To Complete: 120 min	Total Manhours (16.0)	

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y
FSS latch/unlatch: Y

TV(signature data auto scan): Y
RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: Y

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): Y

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: Y

Fuel cell fill/drain/purge/pressurization: Y

Propellant metering system: Y

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: Y

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 21 SPACECRAFT POCC TEST

SUBTASK NO: < 21.0100> DESCRIPTION: <ISSUE S/C COMMANDS FROM POCC >

ACTIVITY: ISSUE COMMANDS FROM POCC VIA TDRSS-KSC TELEMETRY-ORBITER COMMAND AND DATA SYSTEM.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total-----	(2)-----
		Total-----
		(8)
		(8)

Serial Time To Complete: 240 min Total Manhours (32.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 21 SPACECRAFT POCC TEST

SUBTASK NO: < 21.0200> DESCRIPTION: <VERIFY SPACECRAFT RESPONSE >

ACTIVITY: VERIFY DATA INDICATES POCC IS ABLE TO ISSUE COMMANDS TO THE S/C AND RECEIVE PROPER RESPONSE.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	(2)
		Total { 8 }
		Total { 8 }
Serial Time To Complete:	120 min	Total Manhours (16.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 21 SPACECRAFT POCC TEST

SUBTASK NO: < 21.0300> DESCRIPTION: <POWER DOWN SPACECRAFT >

ACTIVITY: REMOVE SPACECRAFT POWER

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total	(2)
		Total (8)
Serial Time To Complete:	60 min	Total Manhours (8.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 22 CLOSEOUT AND PREPS TO MOVE

SUBTASK NO: < 22.0150>

DESCRIPTION: <DISCONNECT UMBILICALS

>

ACTIVITY: DEMATE AND INSPECT ELECTRICAL CONNECTORS, INSTALL PROTECTIVE COVERS/DEVICES. ATTACH MRPS OR HPA TO OTV ASSEMBLY IN PREPS TO EXIT HANGAR.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	(2)
		Total { 8 }
		Total Manhours (96.0)

Serial Time To Complete: 720 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** -OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 22 CLOSEOUT AND PREPS TO MOVE

SUBTASK NO: < 22.0250>

DESCRIPTION: <MOVE FROM HANGAR

>

ACTIVITY: USING THE MRMS AND HPA, MOVE THE OTV OUT OF THE HANGAR. MONITOR FOR CHANGE IN HEALTH PARAMETERS. POSITION OTV FOR AEROBRAKE INSTALLATION.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total	(2)
		Total (8)
		8
Serial Time To Complete: 240 min		Total Manhours (32.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): Y ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: Y

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 22 CLOSEOUT AND PREPS TO MOVE

SUBTASK NO: < 22.0350> DESCRIPTION: <INSTALL/DEPLOY AEROBRAKE >
ACTIVITY: INSTALL/DEPLOY AEROBRAKE SYSTEM ON THE OTV

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (2)	Total (6)
		8
Serial Time To Complete: 120 min		Total Manhours (16.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N Video: N Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 22 CLOSEOUT AND PREPS TO MOVE

SUBTASK NO: < 22.0450>

DESCRIPTION: <INSTALL OMV ON THE OTV

>

ACTIVITY: INSTALL OMV ON THE OTV-VERIFY ALL POSITION LATCHES ARE LOCKED AND SECURE.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total-----	(2)-----
		Total-----
		(6)
		(8)
Serial Time To Complete: 240 min		Total Manhours (32.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 22 CLOSEOUT AND PREPS TO MOVE

SUBTASK NO: < 22.0550>

DESCRIPTION: <MOVE P/L & OMV TO LAUNCH SITE >

ACTIVITY: COMMAND OMV TO MOVE P/L TO LAUNCH AREA FOR LAUNCH PREPS VIA THE SPACE STATION CONTROL CENTER.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		Total-----
		{ 8 }
		{ 8 }
Serial Time To Complete: 240 min		Total Manhours (32.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: Y

OTV flight support structure: Y

Personnel EVA door: Y

MPAC connection: Y

HPA's (local & teleoperated): Y

Hand & foot restraints: Y

ORU storage lockers: Y

Tool lockers: Y

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 23 OTV/SC LAUNCH PREPS

SUBTASK NO: < 23.0100>

DESCRIPTION: <APPLY POWER TO OTV

>

ACTIVITY: APPLY POWER TO OTV

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		Total-----
		(8)
Serial Time To Complete:	60 min	Total Manhours (8.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 23 OTV/SC LAUNCH PREPS

SUBTASK NO: < 23.0200> DESCRIPTION: <LOAD/MONITOR CRYO >
ACTIVITY: LOAD CRYO AND MONITOR FOR PRESSURE AND VOLUME(INCLUDE FUEL CELLS)

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total	(2) Total (6)
		8

Serial Time To Complete: 480 min Total Manhours (64.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: Y

Prop. load & drain computer system: Y

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): Y

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: Y

Fuel cell fill/drain/purge/pressurization: Y

Propellant metering system: Y

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: Y

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 23 OTV/SC LAUNCH PREPS

SUBTASK NO: < 23.0300> DESCRIPTION: <ACTIVATE/LOAD FUEL CELLS >

ACTIVITY: TRANSFER LOAD FROM SPACE STATION TO OTV FUEL CELLS-VERIFY ALL LOAD PARAMETERS

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2)	CS-G { 6)
	STATION SPECIALIST(S) EVA { 0)	
	Sub Total-----	2)-----
		Total-----
		{ 6)
		{ 8)
Serial Time To Complete: 120 min		Total Manhours (16.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: Y

Bar code reader: N

Video Cameras: Y

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 23 OTV/SC LAUNCH PREPS

SUBTASK NO: < 23.0450> DESCRIPTION: <APPLY POWER TO SPACECRAFT >
ACTIVITY: APPLY POWER TO THE SPACECRAFT

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	2)-----
		Total----- { 6 }
		8 }
Serial Time To Complete: 240 min		Total Manhours (32.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:
Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:
Door(s): N ,Lights: N TV(signature data auto scan): N
FSS latch/unlatch: N RR Umbilical control: N

TRAINING VIDEO SYSTEM: MRMS teleoperation control: N
On-board: N ,Up-link: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: Y Prop. load & drain computer system: N

ORU Bar code data base: N Paging: Y MPAC: N

Planning work station (computer): Y
***** OTV HANGER *****

Aerobrake storage fitting: N OTV flight support structure: N

Personnel EVA door: N MPAC connection: N

HPA's (local & teleoperated): N Hand & foot restraints: N

ORU storage lockers: N Tool lockers: N

Thermal control system: N
***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N
Remote Control Remateable Quick Disconnects,
Fill/drain/vent/pressurization: N
Fuel cell fill/drain/purge/pressurization: N
Propellant metering system: N

EVA Personnel equipment: N EVA equipment box: N Support Equipment: N

Portable MPAC: N Lights: N Bar code reader: N

Video Cameras: N Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 23 OTV/SC LAUNCH PREPS

SUBTASK NO: < 23.0550> DESCRIPTION: <COMMAND S/C TO PRELAUNCH MODE >

ACTIVITY: SECURE SPACECRAFT SYSTEMS IN PRELAUNCH MODE

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (8)
Serial Time To Complete: 30 min		Total Manhours (4.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 24 DEPLOY OTV/SPACECRAFT

SUBTASK NO: < 24.0700> DESCRIPTION: <PERFORM POC LAUNCH TESTS >
ACTIVITY: ISSUE COMMAND AND VERIFY OTV AND S/C READY FOR LAUNCH TO GEO

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		(6)
		Total-----
		(8)
Serial Time To Complete: 60 min		Total Manhours (8.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 24 DEPLOY OTV/SPACECRAFT

SUBTASK NO: < 24.0850> DESCRIPTION: <RELEASE OTV/SC FROM OMV >

ACTIVITY: RELEASE COMBINATION OTV AND SPACECRAFT IN LEO. RETURN THE OMV TO ITS PARKING HANGAR AT THE SPACE STATION.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (6)
		Total Manhours (40.0)

Serial Time To Complete: 300 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N TV(signature data auto scan): N
FSS latch/unlatch: N RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 25 LAUNCH FROM LEO

SUBTASK NO: < 25.0100>

DESCRIPTION: <VERIFY NAV POSITION

>

ACTIVITY: VERIFY PCCC UPDATE IS RECEIVED AND NAV COMPUTER HAS UPDATED INFORMATION.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total	(2)
		(6)
		(8)
Serial Time To Complete:	60 min	Total Manhours (8.0)

SC-PCCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N
FSS latch/unlatch: N

TV(signature data auto scan): N
RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobroke storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 25 LAUNCH FROM LEO

SUBTASK NO: < 25.0200> DESCRIPTION: <VERIFY PROPULSION SYSTEM >
ACTIVITY: VERIFY TANK PRESSURES ARE NORMAL-VERIFY ENGINE CONTROL

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (2)	Total (6)
		Total Manhours (8.0)

Serial Time To Complete: 80 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N
FSS latch/unlatch: N

TV(signature data auto scan): N
RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 25 LAUNCH FROM LEO

SUBTASK NO: < 25.0300>

DESCRIPTION: <LAUNCH TO GEO

>

ACTIVITY: ISSUE COMMAND VIA POCC/OTVCS OR SPACE STATION TO LAUNCH TO GEO

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2)	CS-G { 6)
	STATION SPECIALIST(S) EVA { 0)	
	Sub Total-----	2)-----
		Total-----
		{ 6)
		{ 8)
Serial Time To Complete: 240 min		Total Manhours (32.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 26 PERFORM MISSION

SUBTASK NO: < 26.0100>

DESCRIPTION: <DEPLOY SPACECRAFT

>

ACTIVITY: ISSUE COMMAND TO RELEASE THE SPACECRAFT IN GEO

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (6)
		Total Manhours (8.0)

Serial Time To Complete: 60 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 27 ORIENT AND RTN FROM GEO TO LEO

SUBTASK NO: < 27.0100>

DESCRIPTION: <ISSUE NAV UPDATE

>

ACTIVITY: POCC ISSUE NAV UPDATE-VERIFY COMPUTER RESPONDS TO NEW NAV DATA UPDATE.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	(2)
		Total { 6 }
		8 }
Serial Time To Complete:	60 min	Total Manhours (8.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobreak storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remoteable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 27 ORIENT AND RTN FROM GEO TO LEO

SUBTASK NO: < 27.0200> DESCRIPTION: <ORIENT OTV TO DE-ORBIT >

ACTIVITY: USING RCS, POSITION OTV FOR RETURN TO LEO

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (6)
		Total Manhours (8.0)

Serial Time To Complete: 80 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N TV(signature data auto scan): N
FSS latch/unlatch: N RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 27 ORIENT AND RTN FROM GEO TO LEO

SUBTASK NO: < 27.0300>

DESCRIPTION: <FIRE ENGINES

>

ACTIVITY: VERIFY ENGINE FIRE UNDER COMPUTER CONTROL PER FLIGHT PROCEDURES

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (6)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (2)	Total (6)
		Total Manhours (8.0)

Serial Time To Complete: 60 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 28 SPACESTATION AND OTV RENDEZOUS

SUBTASK NO: < 28.0100> DESCRIPTION: <POSITION OTV IN STANDOFF ORBIT>

ACTIVITY: TRANSFER OTV TO RENDEZOUS ZONE. ESTABLISH STABLE ORBIT IN STANDOFF POSITION

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (6)
		Total (8)
Serial Time To Complete: 240 min		Total Manhours (32.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N TV(signature data auto scan): N
FSS latch/unlatch: N RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 29 OTV RECOVERY

SUBTASK NO: < 29.0100> DESCRIPTION: <RETRACT EEC, VERIFY OTV SAFE >
ACTIVITY: ISSUE COMMANDS TO RETRACT THE EEC. SHUTDOWN/SAFE OTV FOR RECOVERY.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	2) Total { 6 }
		8 }
Serial Time To Complete: 120 min		Total Manhours (16.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 29 OTV RECOVERY

SUBTASK NO: < 29.0200> DESCRIPTION: <VENT OTV CRYO SYSTEM >

ACTIVITY: ISSUE COMMANDS TO CONFIGURE CRYO SYSTEM FOR VENT OPERATIONS. VENT THE OTV CRYO SYSTEM.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	Total
	(2)	(6)
		(8)
Serial Time To Complete: 240 min		Total Manhours (32.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 29 OTV RECOVERY

SUBTASK NO: < 29.0300> DESCRIPTION: <OTV CAPTURE >

ACTIVITY: MOVE THE OMV FROM ITS STORAGE HANGER TO THE OTV SAFETY ZONE. DOCK AND CAPTURE THE OTV. VERIFY OTV/OMV DOCK AND LATCH.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		Total-----
		(8)
Serial Time To Complete:	60 min	Total Manhours (8.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N
FSS latch/unlatch: N

TV(signature data auto scan): N
RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: Y

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 34 MOVE TO PROCESSING FACILITY

SUBTASK NO: < 34.0150>

DESCRIPTION: <USE MRMS TO MOVE OTV INTO HGR >

ACTIVITY: POWER DOWN THE OTV. OPEN HANGAR AND PREPARE TO MOVE THE OTV INTO THE HANGER AND POSITION FOR INSTALLATION INTO WORKSTAND.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		Total-----
		{ 2 }
Serial Time To Complete: 300 min		Total Manhours (10.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: Y Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): Y ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: N RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: Y

OTV flight support structure: Y

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): Y

Hand & foot restraints: N

ORU storage lockers: Y

Tool lockers: Y

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 34 MOVE TO PROCESSING FACILITY

SUBTASK NO: < 34.0250> DESCRIPTION: <REMOVE AND STORE AEROBRAKE >

ACTIVITY: USING THE SPECIAL TOOL KIT, PERFORM THE EVA TO REMOVE AND STORE THE AEROBRAKE.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (1)	CS-G (0)
	STATION SPECIALIST(S) EVA (2)	
	Sub Total	Total
	(3)	(3)
		Total Manhours (36.0)

Serial Time To Complete: 720 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: Y Data Dump: N

EVA MONITOR:

Audio: Y ,Video: Y ,Telemetry: Y

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: Y

Planning work station (computer): Y

***** OTV HANGER *****

Aerobroke storage fitting: Y

OTV flight support structure: Y

Personnel EVA door: Y

MPAC connection: Y

HPA's (local & teleoperated): Y

Hand & foot restraints: Y

ORU storage lockers: Y

Tool lockers: Y

Thermal control system: Y

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: Y

EVA equipment box: Y

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 34 MOVE TO PROCESSING FACILITY

SUBTASK NO: < 34.0300> DESCRIPTION: <INSTALL OTV IN WORKSTAND >

ACTIVITY: INSTALL/SECURE OTV IN THE OTV WORKSTAND

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (0)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (2)	Total (2)
Serial Time To Complete: 240 min		Total Manhours (8.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects;

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 34 MOVE TO PROCESSING FACILITY

SUBTASK NO: < 34.0400> DESCRIPTION: <REMOVE BATTERIES AND ORDNANCE >
ACTIVITY: REMOVE BATTERY ACCESS PANELS AND REMOVE BATTERIES. REMOVE ALL UNUSED ORDNANCE

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (0)
		Total Manhours (6.0)

Serial Time To Complete: 180 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:
Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:
Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: N RR Umbilical control: Y

TRAINING VIDEO SYSTEM: MRMS teleoperation control: Y
On-board: N ,Up-link: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N Prop. load & drain computer system: N

ORU Bar code data base: N Paging: Y MPAC: N

Planning work station (computer): Y
***** OTV HANGER *****

Aerobrake storage fitting: N OTV flight support structure: N

Personnel EVA door: N MPAC connection: N

HPA's (local & teleoperated): N Hand & foot restraints: N

ORU storage lockers: N Tool lockers: N

Thermal control system: N
***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N
Remote Control Remateable Quick Disconnects,
Fill/drain/vent/pressurization: N
Fuel cell fill/drain/purge/pressurization: N
Propellant metering system: N

EVA Personnel equipment: N EVA equipment box: N Support Equipment: N

Portable MPAC: N Lights: N Bar code reader: N

Video Cameras: N Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 34 MOVE TO PROCESSING FACILITY

SUBTASK NO: < 34.0550>

DESCRIPTION: <CONNECT UMBILICALS

>

ACTIVITY: MATE ALL UMBILICAL CONNECTIONS IN PREPARATION FOR OTV PROCESSING

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (2)	CS-G (0)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (2)	Total (0)
		Total Manhours (10.0)

Serial Time To Complete: 300 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 35 CONDUCT PLANNED MAINTENANCE

SUBTASK NO: < 35.0100> DESCRIPTION: <REFURBISH AEROBRAKE SYSTEM >

ACTIVITY: PERFORM MAINTENANCE AND REFURBISHMENT OF THE AEROBRAKE SYSTEM

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (0)
		Total Manhours (20.0)

Serial Time To Complete: 600 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N Video: N Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 35 CONDUCT PLANNED MAINTENANCE

SUBTASK NO: < 35.0200> DESCRIPTION: <REMOVE ENGINE PUMPS AND STORE >

ACTIVITY: REMOVE THE ENGINE/PUMP USING THE SPECIAL TOOL KIT AND ROUTE TO STORAGE AREA FOR RETURN TO EARTH FOR REPAIR AND REFURBISHMENT

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (0)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (0)
		Total Manhours (12.0)

Serial Time To Complete: 360 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): Y ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 35 CONDUCT PLANNED MAINTENANCE

SUBTASK NO: < 35.0300> DESCRIPTION: <REINSTALL ENGINES/PUMPS >

ACTIVITY: REINSTALL AND RETEST ENGINE/PUMPS

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total	Total
	(2)	(0)
		(2)
Serial Time To Complete: 360 min		Total Manhours (12.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): Y ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 36 CONDUCT UNPLANNED MAINTENANCE

SUBTASK NO: < 36.0100>

DESCRIPTION: <CONDUCT UNPLANNED MAINT

>

ACTIVITY: AS REQUIRED

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 0 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (0)	Total (0)
Serial Time To Complete:	0 min	Total Manhours (0.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: N

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: N MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 37 INSTALL MODIFICATIONS

SUBTASK NO: < 37.0100>

DESCRIPTION: <INSTALL MODIFICATIONS

>

ACTIVITY: AS REQUIRED

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (0)	CS-G (0)
	STATION SPECIALIST(S) EVA (0)	
	Sub Total (0)	Total (0)
		Total Manhours (0.0)

Serial Time To Complete: 0 min

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: N MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 38 RETEST VERIFICATION

SUBTASK NO: < 38.0100> DESCRIPTION: <APPLY POWER TO OTV >

ACTIVITY: APPLY POWER TO OTV-VERIFY POWER PROFILE TO INSURE MOD PACKAGE POWER REQUIREMENTS.

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G (6)
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total (2)	Total (8)
		Total Manhours (8.0)

Serial Time To Complete: 60 min

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 38 RETEST VERIFICATION

SUBTASK NO: < 38.0200> DESCRIPTION: <PERFORM OTV HEALTH CHECKS >
ACTIVITY: PERFORM OTV RETEST/REVERIFICATION TO VERIFY HEALTH AND STATUS OF OTV

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2)	CS-G { 6)
	STATION SPECIALIST(S) EVA { 0)	
	Sub Total (2)	Total (6)
		Total (8)
Serial Time To Complete: 60 min		Total Manhours (8.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 38 RETEST VERIFICATION

SUBTASK NO: < 38.0300> DESCRIPTION: <REMOVE POWER FROM OTV >

ACTIVITY: REMOVE POWER FROM THE OTV

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 2 }	CS-G { 6 }
	STATION SPECIALIST(S) EVA { 0 }	
	Sub Total-----	(2)-----
		Total-----
		(8)
		(8)
Serial Time To Complete:	60 min	Total Manhours (8.0)

SC-POCC Support Required: (Y)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: N ,Video: N ,Telemetry: N

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

TV(signature data auto scan): Y

FSS latch/unlatch: Y

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

MRMS teleoperation control: Y

On-board: N ,Up-link: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: N

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: N

EVA equipment box: N

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 39 OTV STORAGE AND RETURN TO FLOW

SUBTASK NO: < 39.0100>

DESCRIPTION: <COVER OTV

>

ACTIVITY: PLACE PROTECTIVE COVERS ON OTV

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (1)	CS-G (0)
	STATION SPECIALIST(S) EVA (2)	
	Sub Total-----	(3)-----
		Total-----
		(3)
Serial Time To Complete:	60 min	Total Manhours (3.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: Y ,Video: Y ,Telemetry: Y

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y TV(signature data auto scan): Y
FSS latch/unlatch: Y RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: Y MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: Y

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: Y

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: Y

EVA equipment box: Y

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
TASK NO: 39 OTV STORAGE AND RETURN TO FLOW

SUBTASK NO: < 39.0200>

DESCRIPTION: <SEAL/MONITOR OTV

>

ACTIVITY: INSTALL SEALS ON OTV AND MONITOR FOR PROPER TEMP AND HUMIDITY

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (1)	CS-G (0)
	STATION SPECIALIST(S) EVA (2)	
	Sub Total (3)	Total (3)
Serial Time To Complete:	60 min	Total Manhours (3.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: Y Tracking: N Data Dump: Y

EVA MONITOR:

Audio: Y ,Video: Y ,Telemetry: Y

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: Y

TV(signature data auto scan): Y

RR Umbilical control: Y

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: Y

Handling and Positioning Aid (HPA) teleoperation: Y

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: N MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: Y

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: Y

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Removable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: Y

EVA equipment box: Y

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
 TASK NO: 39 OTV STORAGE AND RETURN TO FLOW

SUBTASK NO: < 39.0300> DESCRIPTION: <REMOVE SEAL >

ACTIVITY: REMOVE SEALS INSTALLED ON OTV

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA { 1 }	CS-G { 0 }
	STATION SPECIALIST(S) EVA { 2 }	
	Sub Total (3)	Total (3)
Serial Time To Complete: 60 min	Total Manhours (3.0)	

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:
 Audio: Y ,Video: Y ,Telemetry: Y

OTV HANGER REMOTE CONTROL:
 Door(s): N ,Lights: Y TV(signature data auto scan): N
 FSS latch/unlatch: N RR Umbilical control: N

TRAINING VIDEO SYSTEM: MRMS teleoperation control: N
 On-board: N ,Up-link: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N Prop. load & drain computer system: N

ORU Bar code data base: N Paging: N MPAC: N

Planning work station (computer): Y
 ***** OTV HANGER *****

Aerobrake storage fitting: N OTV flight support structure: N

Personnel EVA door: Y MPAC connection: N

HPA's (local & teleoperated): N Hand & foot restraints: N

ORU storage lockers: N Tool lockers: N

Thermal control system: N
 ***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N
 Remote Control Remateable Quick Disconnects,
 Fill/drain/vent/pressurization: N
 Fuel cell fill/drain/purge/pressurization: N
 Propellant metering system: N

EVA Personnel equipment: Y EVA equipment box: Y Support Equipment: N

Portable MPAC: N Lights: N Bar code reader: N

Video Cameras: N Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N

SPACE STATION DETAILED RESOURCES IDENTIFICATION
 TASK NO: 39 OTV STORAGE AND RETURN TO FLOW

SUBTASK NO: < 39.0400>

DESCRIPTION: <REMOVE COVERS/RTN OTV TO FLOW >

ACTIVITY: REMOVE COVERS AND RETURN OTV TO PROCESSING FLOW

Personnel:	SPACE STATION	GROUND STATION
	STATION SPECIALIST(S) IVA (1)	CS-G (0)
	STATION SPECIALIST(S) EVA (2)	
	Sub Total (3)	Total (3)
Serial Time To Complete:	60 min	Total Manhours (3.0)

SC-POCC Support Required: (N)

AUTOMATION NEED: (Primary Key)

AUTOMATION SECONDARY KEY(S)

***** CONTROL SYSTEM - STATION (CS-S) *****

OTV Control & monitor system: N Tracking: N Data Dump: N

EVA MONITOR:

Audio: Y ,Video: Y ,Telemetry: Y

OTV HANGER REMOTE CONTROL:

Door(s): N ,Lights: Y

FSS latch/unlatch: N

TV(signature data auto scan): N

RR Umbilical control: N

TRAINING VIDEO SYSTEM:

On-board: N ,Up-link: N

MRMS teleoperation control: N

Handling and Positioning Aid (HPA) teleoperation: N

OMV support: N

Prop. load & drain computer system: N

ORU Bar code data base: N

Paging: N MPAC: N

Planning work station (computer): Y

***** OTV HANGER *****

Aerobrake storage fitting: N

OTV flight support structure: N

Personnel EVA door: Y

MPAC connection: N

HPA's (local & teleoperated): N

Hand & foot restraints: N

ORU storage lockers: N

Tool lockers: N

Thermal control system: N

***** PROPELLANT SERVICING FACILITY AND EQUIPMENT *****

PROPELLANT SERVICING FACILITY

Standard Servicing Interface (remote latch/unlatch): N

Remote Control Remateable Quick Disconnects,

Fill/drain/vent/pressurization: N

Fuel cell fill/drain/purge/pressurization: N

Propellant metering system: N

EVA Personnel equipment: Y

EVA equipment box: Y

Support Equipment: N

Portable MPAC: N

Lights: N

Bar code reader: N

Video Cameras: N

Tools manual/power: N

External ORU storage boxes: N

SC electrical/mechanical interface simulator: N